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SYMPTOMATOLOGY, DIAGNOSIS AND TREATMENT OF CARRIERS OF ENDAMEBA HISTOLYTICA *

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In 1921, I [1] called attention to the frequency of the occurrence of clinical symptoms in apparently healthy "carriers" of *Endameba histolytica* and again, in 1927, it was noted [2] that symptoms occur in the majority of carriers of this parasite, and that the discovery and treatment of these carriers is important from both a prophylactic and a therapeutic standpoint, owing to the pathogenic nature of the organism.

Since the contributions referred to, this subject has attracted widespread attention and there have been published several papers confirming my observations and calling attention to the practical importance of recognizing the mild infections with this very important parasite of man, notably those of Kofoid,[3] Castex and Greenway,[4] Trabaud [5] and Mühlens.[6] It is now well established that many carriers of *Endameba histolytica* present definite symptoms of the infection and are really suffering from a chronic toxemia due to the parasite.

The vast majority of physicians in temperate regions, as well as in the tropics, pay little attention to amebic infection of the intestine unless definite symptoms of dysentery are present, and the term amebic dysentery has come to mean to many practitioners the entire picture of amebic infection or "amebiasis." As a matter of fact, the symptom complex of dysentery is actually the end-result of infection with *Endameba histolytica*, and for one case of amebic dysentery which occurs there are hundreds of cases of amebic diarrhea, or various gastro-intestinal or nervous conditions, which are really due to the invasion of the intestine by this parasite.

It should be remembered that *Endameba histolytica* is normally a tissue parasite, living within the tissues composing the various coats of the human intestine, and that infection with this parasite means, in every instance, injury to the mucous membrane of the intestine with the invasion of the underlying tissue by the parasite. When the resistance of the individual is good the minute lesions produced by the parasite in the mucous membrane heal quickly or never become numerous enough to result in symptoms, but if resistance is lowered healing does not occur in many of the lesions, these become more numerous, and symptoms of the infection appear. Many carriers of the parasite do not have any symptoms of their infection, although it is known that minute lesions must have been and are being produced in the intestine; but many do have definite symptoms of the infection and it is this class of cases that are here considered.

The etiology of the symptoms observed in carriers of *Endameba histolytica* is easily understood if one bears in mind the fact that the amebas actually penetrate the mucous membrane of the intestine and multiply within the tissues of that organ. I [7] have shown that extracts of this parasite are hemolytic to human and other red blood corpuscles and cytolytic to the epithelial cells of the mucous membrane of the intestine, and it is probable that these parasites penetrate the intestinal coats through the agency of these substances. Having once entered the tissues of the intestine, the amebas live on them and multiply more or less rapidly according to the resistance of the host. In entering the tissues of the intestine they produce minute lesions that also allow of the entry of harmful bacteria from the intestine and their toxins, and thus a mixed infection is produced which explains the multitude of symptoms present in the carrier and their great variation in severity. It may be truthfully stated that *Endameba histolytica* thus brings about a real "focal infection" in the intestine, for each minute lesion produced by this parasite, unless it heals very promptly, becomes a point of potential focal infection. In view of this fact, it is somewhat curious that, in the interest in the study of focal infections situated in the mouth and throat, the condition of focal infection which must be present in the intestine of individuals harboring *Endameba histolytica* has been almost entirely neglected, although the lesions, while minute, may number hundreds or thousands, each furnishing a potential point of entry into the blood, lymphatics or tissues of harmful bacteria or their products.

It has been demonstrated by Musgrave [8] and others that marked ulcerative lesions due to *Endameba histolytica* may exist in the intestine without the production of the symptoms of dysentery. These infections were recognized at autopsy, but inquiry revealed the fact that many such persons complained during life of the symptoms which are now recognized as present in many

* From the Department of Laboratories and the Department of Preventive Medicine and Clinical Pathology, Army Medical School.

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1. Craig, C. F.: Unrecognized Infections in Production of Carriers of Pathogenic Organisms, J. A. M. A. **77**: 827 (Sept. 10) 1921.
2. Craig, C. F.: The Symptomatology of Carriers of Endameba Histolytica, J. A. M. A. **88**: 19 (Jan. 1) 1927.
3. Kofoid, C. A.: Human Amebiasis with Special Reference to the Chronic Phase, Texas State J. Med. **21**: 12 (Oct.) 1925.
4. Castex, M. R., and Greenway, D.: Little-Known Clinical Manifestations of Human Amebiasis, Bull. et mém. Soc. méd. d. hôp. de Paris **50**: 376 (March 11) 1926.
5. Trabaud, H.: Occult Amebiasis, Bull. et mém. Soc. méd. d. hôp. de Paris **50**: 614 (April 22) 1926.
6. Mühlens, P.: München med. Wchnschr. **74**: 1832 (Oct. 28) 1927.
7. Craig, C. F.: Observations on the Hemolytic, Cytolytic and Complement Binding Properties of Extracts of Endameba Histolytica, Am. J. Trop. Med. **7**: 225 (July) 1927.
8. Musgrave, W. E.: Philippine J. Sc. **5**: 229, 1910.

carriers, and the treatment of the infection would probably have resulted in recovery. I believe that, while all carriers of this parasite have microscopic lesions caused by it in the intestine, a considerable proportion also have definite macroscopic lesions, even though symptoms may be slight or absent. Therefore it is impossible to assure even the apparently healthy carriers of *Endameba histolytica* that definite ulceration does not exist in the intestine, and, strictly speaking, it is also true that there is no such thing as a "healthy" carrier of this parasite.

THE SYMPTOMS OF INFECTION WITH ENDAMEBA HISTOLYTICA

Since 1921 I have carefully noted the symptoms observed in carriers of *Endameba histolytica* and, in my experience, most of the symptoms are connected with the gastro-intestinal and nervous systems, especially the former. I do not intend here to describe in detail all the symptoms that have been noted in carriers but to mention briefly those that have been most frequently noted in the clinical study of such infections.

In the gastro-intestinal system, the symptoms most commonly complained of are chronic constipation, with short intervals of more or less severe diarrhea, accompanied by colicky pain in the lower part of the abdomen; a capricious appetite; periods of anorexia; slight nausea while eating or immediately afterward; flatulence and distention of the abdomen; gaseous eructations after eating and the usual symptoms of "indigestion"; evanescent neuralgic pain in the right iliac region accompanied by gaseous distention of the intestine; a dull aching sensation in the lower part of the abdomen, and attacks of diarrhea, nocturnal in occurrence, and accompanied by severe colic. These symptoms do not all occur in each case, but one or more of them are generally present in infections with *Endameba histolytica*.

The symptoms referable to the nervous system are those commonly observed in the so-called neurasthenic patient. The most common are headache, dull in character, and usually frontal in situation; neuralgic pains in the head, arms and legs; aching in the legs, especially pronounced before arising in the morning; sleepiness or mild insomnia; dulness and lack of initiative and interest in the daily work; nervous irritability; lack of ambition, and a dull aching sensation in the area of the liver or neuralgic pain in this region. The carrier of this parasite often complains of "feeling below par," although he cannot tell exactly what is the basis for his statement, and inquiry not infrequently fails to elicit any definite symptoms accounting for his lack of feeling of well being characteristic of the healthy person.

The physical signs in carriers of *Endameba histolytica* are often quite definite, and it is surprising how frequently a careful physical examination will elicit evidence of an infection with this parasite. Perhaps the most common physical sign is underweight. Nearly all carriers of this organism who present any symptoms at all, and many who do not, are quite markedly underweight, and a loss of weight occurs after each attack of diarrhea or when food is distasteful or the appetite poor. The loss of weight is most pronounced in hot weather, and it is during this time that the attacks of diarrhea are most common. In the winter time carriers usually gain somewhat in weight and the appetite is better, while diarrheal attacks are much less frequently observed.

Tenderness on deep pressure in the right iliac region and over the descending colon is not infrequently present, and in some cases there is definite tenderness over the liver, indicating the presence of a mild hepatitis. Sometimes there are present anesthetic or hyperesthetic areas of the skin of the arms, legs or thighs, and some authorities have described a definite neuritis affecting these localities as occurring in these cases.

An irritable, slightly irregular pulse is frequently noted in carriers of *Endameba histolytica*, usually of decreased volume, and increasing greatly in rapidity after slight exertion or nervous excitement. Excessive perspiration of the palms of the hands and the soles of the feet is a frequent physical sign and a subnormal temperature is a common condition in these infections, the subnormality being most marked in the early morning hours. Frequently the temperature in these cases will not exceed 97 F. in the early morning and never rises above 98 F. at any time. More rarely, carriers of this parasite show a slight rise above normal in temperature in the late afternoon, the rise seldom going above 99 F.; but a subnormal temperature is the rule in most of these infections.

One of the noticeable signs of infection with *Endameba histolytica* is the slight pallor or yellowish tint of the skin so frequently observed. This is due to the mild degree of anemia usually present, the red blood cell count being between 3,500,000 and 4,000,000 erythrocytes per cubic millimeter, while the hemoglobin averages from 10 to 15 points below normal. The leukocyte count is not characteristic, being practically normal in most cases unless symptoms are very pronounced, when a mild leukocytosis is sometimes observed.

This brief survey of the symptoms and physical signs noted in carriers of *Endameba histolytica* does not include many symptoms and signs that have been described by various authorities in individual infections, but are those most frequently observed. Most of these persons consider themselves in very good health, regarding the symptoms present as due to some indiscretion in diet or a temporary indisposition, and few consult a physician in regard to their condition. When a physician is consulted, and no organic condition can be found to account for the symptoms, it is too often the case that such patients are regarded as neurasthenics or hypochondriacs, and receive little sympathy or help, as comparatively few physicians in this country ever make, or have made, an examination of the feces for this parasite.

THE DIAGNOSIS OF CARRIERS OF ENDAMEBA HISTOLYTICA

The diagnosis of carriers of *Endameba histolytica* can be made only by a thorough microscopic and cultural examination of the feces of the suspected person. Enough has been said of the symptoms which are most characteristic of the infection to demonstrate that a diagnosis is impossible by attention to the physical signs and symptoms alone, as these are often simulated by other pathologic conditions of the gastro-intestinal tract or the nervous system. While a simple, direct microscopic examination of the feces is usually successful in demonstrating the parasite, if present, a single examination often fails, and a negative report should never be considered as conclusive until at least six samples of the feces, taken at different times, prove negative. With the combination of the direct microscopic examination of the feces and cultures of the latter, practically every infection with this parasite may be discovered, but in the laboratories of the Army Medical School three methods of examination are resorted to in the

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diagnosis of infections with *Endameba histolytica:* direct microscopic examination of the feces; culture of the feces, and sedimentation and concentration of the feces for cysts of the parasite. By a combination of these three methods we believe that it is possible to diagnose every infection with *Endameba histolytica;* and although the methods are time consuming and require the services of well trained technicians, the results obtained justify their use.

Direct Microscopic Examination of the Feces.—The methods of making a direct microscopic examination of the feces for *Endameba histolytica* are described in numerous works devoted to clinical diagnosis and need not be considered in extenso here. It should be remembered that this parasite has two distinct stages in its life history in man, a motile, or vegetative stage, and a cystic stage, in which the organism rounds up and becomes motionless. The motile forms occur only in liquid or semiliquid stools, in any number, while the cysts occur in semiformed or formed stools. It follows, therefore, that if it is desired to study the motile forms, a saline cathartic should be administered, unless diarrhea is present, while if it is desired to study the cysts, semiformed or formed stools should be examined. In most carriers of the parasite, unless they are examined at the time of a diarrheal attack, the stools are formed, and the diagnosis is easily made by finding the cysts in such stools, for cysts are always present, and it is not necessary to administer a cathartic in order to make a diagnosis.

A little of the fecal material is placed on a microscopic slide, mixed with double strength compound solution of iodine, covered with a cover-glass, and examined with a one-eighth inch dry lens in the microscope. The iodine solution renders the nuclei of the cysts distinct, so that they can be counted, and thus a diagnosis of the species of amebas present may be made without difficulty by a trained technician. It is unnecessary to state that the diagnosis of the amebas of the human intestine should not be attempted unless one has been taught the morphology of these parasites and has had experience in such examinations. No less than five species of amebas inhabit the intestine of man, and in the monographs of Dobell,[9] Wenyon[10] and myself[11] will be found detailed descriptions of the morphology of these parasites and the methods of making a differential diagnosis. Repeated examinations of the feces should be made if a direct microscopic examination is alone relied on in diagnosis, and at least six specimens should be examined before a negative result is accepted as conclusive.

Culture of the Feces.—The first investigator to call attention to the value of taking cultures of the feces in the diagnosis of infections with *Endameba histolytica* was St. John[12] of the U. S. Army Medical Corps. He demonstrated that with the aid of cultures a higher percentage of persons was found infected with this parasite than was found by a direct microscopic examination of the feces, and since his publication I,[13] in conjunction with him, have confirmed his results. It has been found that the culture of the feces on Boeck and Drbohlav's medium, or the more simple mediums that I[14] have devised, is a valuable addition to the methods of diagnosis in amebic infections. The methods of preparing and using these various culture mediums for the cultivation of *Endameba histolytica* have been described in previous communications,[15] and the reader is referred to these for detailed instructions regarding the use of culture methods in the diagnosis of this parasite.

Sedimentation of the Feces.—This method of examination is of value only in the examination of semiformed or formed stools in which cysts are present, as the motile forms of the ameba are not demonstrated by sedimentation. The value of the method consists in the fact that a large amount of feces can thus be examined and the cysts, if present, concentrated, so that if the latter are few the chances of finding them are greatly increased. The method of sedimentation that we have used is that recommended by Yorke and Adams,[16] which is as follows:

> A selected portion of the feces, about 10 Gm., is thoroughly emulsified in 200 cc. of distilled water and allowed to stand for from twenty to thirty minutes to remove the coarser, heavier particles. The supernatant fluid is then decanted into a 500 cc. container and distilled water added to a total of 500 cc. After standing over night in the ice chest (8 C.) the cysts will be found in the sediment. The supernatant fluid is now decanted and discarded. The sediment is washed once with distilled water and precipitated by centrifugalization at 2,000 revolutions per minute for two minutes. The sediment is now transferred to a solution of sucrose of a specific gravity of approximately 1.080 and resuspended by shaking the mixture thoroughly (approximately 2 cc. of sediment to 14 cc. of sucrose solution). The suspension in sugar solution is then centrifugalized at 3,000 revolutions per minute for three minutes. By this treatment most of the fecal particles left will be precipitated and the majority of the cysts of *Endameba histolytica* and of other amebas will remain suspended. The cysts remaining in the sucrose solution are concentrated by diluting the solution with three volumes of distilled water and centrifugalizing at 2,000 revolutions per minute for two minutes, when the majority of the cysts will be found in the sediment. A small portion of this is placed on a microscopic slide, diluted with the iodine solution used in the direct examination of the feces for the parasite, covered with a cover-glass, and examined.

The method of sedimentation is a very accurate one for the demonstration of *Endameba histolytica* in the cystic stage of development, giving results closely parallel to those given by the cultivation of the parasite from the feces.

COMPLEMENT FIXATION

A complement fixation test that I[17] have devised and already described has been employed to a limited extent in the diagnosis of infections with *Endameba histolytica* and has been found useful in this respect, but owing to technical difficulties it is yet too early to reach a conclusion regarding the practical value of the test in diagnosis.

THE PERCENTAGE OF CARRIERS DEMONSTRATED BY THE METHODS DESCRIBED

In reviewing the literature treating of the numerous surveys that have been made for infection with *Endameba histolytica,* one is impressed with the great diversity in the results obtained by different investigators who have handled similar material. Thus

9. Dobell, Clifford: The Amoebae Living in Man, London and New York, 1919.
10. Wenyon, C. M.: Protozoology, London and New York, 1926.
11. Craig, C. F.: A Manual of the Parasitic Protozoa of Man, Philadelphia and London.
12. St. John, J. H.: Practical Value of Examination for Endameba Histolytica by Culture, J. A. M. A. **86:** 1272 (April 24) 1926.
13. Craig, C. F., and St. John, J. H.: The Value of Cultural Methods in Surveys for Parasitic Amebas of Man, Am. J. Trop. Med. **7:** 39 (Jan.) 1927.
14. Craig, C. F.: A Simplified Method for the Cultivation of Endameba Histolytica, Am. J. Trop. Med. **6:** 333 (Sept.) 1926; Observations on the Cultivation of Endameba Histolytica, ibid. **6:** 461 (Nov.) 1926.
15. Craig and St. John (footnote 13). Craig (footnote 14).
16. Yorke, W., and Adams, A. R. D.: Observations on Endameba Histolytica, Ann. Trop. Med. & Hyg. **20:** 279 (Aug. 13) 1926.
17. Craig, C. F.: Complement Fixation in the Diagnosis of Infections with Endameba Histolytica, Am. J. Trop. Med. **8:** 29 (Jan.) 1928.

the percentage of carriers of this parasite in the United States has been reported by different observers to vary all the way from 0 to more than 20, the average percentage reported being in the neighborhood of 10. This notable variation depends mostly on the number of specimens of feces examined in each case, the skill and experience of the investigator, the social class of the persons examined, and, most important of all, the methods of examination. So far as I know, the three methods of examination mentioned in this contribution have never been combined in any surveys for *Endameba histolytica* prior to the work of St. John and myself, so that it would be expected that our surveys would give a higher percentage of positive results than surveys based entirely on a microscopic examination of the feces and usually on the results of only one or two such examinations. As a matter of fact, our results, even with all three methods mentioned, have not given as high a positive percentage as some results published by Kofoid and Swezy [18] and Boeck and Stiles,[19] in selected classes of persons. Thus Kofoid and Swezy, in the examination of 154 students at the University of California, found eighty-two positive for *Endameba histolytica,* or 53.2 per cent, while Boeck and Stiles found an incidence of 27.3 per cent in persons in a certain institution which they surveyed. Kofoid and Swezy made an average of three and eight-tenths examinations in each person, using the direct microscopic method alone, while Boeck and Stiles made an average of six examinations of each person, using the direct microscopic method. It is now quite generally accepted that an incidence of about 10 per cent of infection with this parasite may be expected in carefully conducted surveys of the population of most localities in the United States, with a higher incidence of infection in institutions and in regions along the Mexican border and the Gulf coast.

At the Army Medical School it has been the practice, during the past two years, to make a survey for *Endameba histolytica* in the classes of medical, dental and veterinary officers attending the school, using the three methods which have been mentioned. These classes are composed of officers from all parts of the United States, and practically none of them have had service in the tropics or outside the United States. During this time 116 persons have been examined, of whom seventeen, or 14.6 per cent, were positive for *Endameba histolytica.* Of those found positive, only one gave a history of having had amebic dysentery but careful inquiry elicited the fact that more than 75 per cent showed definite symptoms which might have been caused by the infection, and proper treatment resulted in the disappearance of these symptoms and improvement in the health of the patient in every instance.

The percentage of infection with this parasite in the surveys at the Army Medical School should not be taken as indicating the percentage of infection throughout this country, as the number of persons surveyed is small and it is probably true that the percentage would decrease with an increase in the number examined; but the results certainly indicate that the general average of infections with *Endameba histolytica* in the population of the United States is at least 10 per cent, as heretofore believed by many students of the subject.

18. Kofoid, C. A., and Swezy, Olive: On the Prevalence of Carriers of Endameba Dysenteriae Among Soldiers Returned from Overseas Service, Am. J. Trop. Med. **1**: 41 (Jan.) 1921.

19. Boeck, W. C., and Stiles, C. W.: Bull. 133, Hyg. Lab., U. S. P. H. S., 1923.

THE TREATMENT OF CARRIERS OF ENDAMEBA HISTOLYTICA

The fact that every person harboring *Endameba histolytica* must have lesions in the intestine due to this parasite, even though microscopic in size, and the further fact that a large majority of such persons who are usually considered as "healthy" carriers of this parasite present symptoms caused by the infection, render the proper treatment of such infections of great importance from both a therapeutic and a prophylactic standpoint. As already stated, of the 116 apparently healthy men examined at the Army Medical School, seventeen, or 14.6 per cent, were found to be infected with *Endameba histolytica,* and of these, thirteen, or 76.4 per cent, presented symptoms due to the infection, which disappeared after treatment resulting in the disappearance of the parasite.

Several drugs have been found more or less efficient in the treatment of amebic dysentery but most of them require hospitalization of the infected person, which is obviously too much to expect of persons, like those considered here, who are not sick enough even to consult a physician, in most instances, and who would desire to continue at their occupations without interruption. Emetine hydrochloride has been found of comparatively little value in actually curing amebic infection, although most efficient in causing the disappearance of symptoms, and emetine bismuth iodide, while more efficient from a curative standpoint, requires the patient to be in bed and the diet carefully restricted during treatment. Chiniofon (yatren), perhaps more efficient than either of the drugs mentioned, also requires placing the patient in bed and, for the best results, administration both by mouth and by rectum. Owing to the number of carriers of *Endameba histolytica* and the mildness of the symptoms present in the vast majority of cases, it is obvious that any treatment requiring rest in bed and the interruption of the occupation of the patient is not practical, and that the ideal drug for the treatment of this class of infections would be one that could be administered by mouth without interrupting the occupation of the patient.

Owing to the favorable reports of numerous observers on the treatment of amebic dysentery, in both the acute and chronic stages with acetarsone (stovarsol), this drug has been used in the treatment of the carriers of *Endameba histolytica* detected during the surveys at the Army Medical School, and with excellent results. Acetarsone, or acetylaminohydroxyphenylarsonic acid, is a synthetic arsenical preparation containing from 27.1 to 27.4 per cent of arsenic. It was introduced by the French for the treatment of syphilis, and has the advantage of administration by mouth instead of intravenously, as in the case of the arsphenamines. It has been extensively used in the treatment of amebic dysentery with favorable results, and it can be administered without interrupting the occupation of the patient, in the case of carriers of the infection. It is furnished in compressed tablets each containing 0.25 Gm., and each tablet is marked in such a way that it can be broken into halves if less than one tablet is prescribed as a dose.

The first few carriers treated here were given one tablet three times a day for one week; the treatment was then stopped for one week, and the same dose was again given for another week. It was found that in most cases the full dose caused unpleasant gastrointestinal symptoms, as gaseous distention of the abdomen, colicky pains in the abdomen, and mild diarrhea,

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while in one case a bilateral erythema appeared on the forearms, and the eyelids and face were somewhat swollen and puffy. In view of these symptoms of arsenic intoxication, the dose was reduced in all cases to one-half a tablet three times a day for one week, with cessation of the treatment for one week, and one-half a tablet three times a day for one week longer. This dosage has been found sufficient and is not attended, in our experience, with unpleasant symptoms. The occupation of the patient was not interfered with in any way, and the only directions regarding diet that were necessary was to warn against eating too rich foods or an excess of carbohydrates.

The results of this treatment as outlined have been very gratifying and indicate that in this drug we may have an ideal treatment for these mild infections with *Endameba histolytica* in the so-called carriers of the infection. In all, seventeen persons infected with the parasite have been treated, and in all but two the organism disappeared from the feces after one course of treatment, while two courses of treatment were successful in the resistant cases. Eleven of these carriers have been under observation for more than six months, and in all the feces have remained negative for *Endameba histolytica*, so that we believe that it is permissible to consider them as cured of the infection. The remaining six patients have been under observation for periods varying from three to four months and are still normal.

In all the persons who presented symptoms referable to the infection, the symptoms have disappeared, and in all an increase in weight was noted within three or four weeks following the completion of the treatment. It is also of interest to note that the persons giving a positive complement fixation reaction with the test mentioned became negative within a period varying from a week to three weeks after treatment.

It should be remembered that acetarsone is a very powerful arsenical preparation and should be administered only under the direct supervision of a physician. Several cases of severe arsenical poisoning have been reported following the use of this drug and, for this reason, care must be taken in its administration. With the dosage recommended and used in the infections discussed in this contribution no severe symptoms of arsenical poisoning were observed and in only two persons were symptoms noted that indicated a marked intolerance to the drug.

Finally, I wish to call attention again to the fact that the majority of the so-called healthy carriers of *Endameba histolytica* present definite symptoms of infection with this parasite and that the diagnosis and treatment of these infections are important to the health of the individual and in the prevention of the transmission of the parasite to others. It should also be stressed that infection with this parasite is common throughout the United States and that the profession in this country should recognize that the name amebic dysentery, so often applied to infection with *Endameba histolytica*, indicates simply the end-result of such infection. Amebic dysentery, while it occurs much more frequently in the United States than is usually believed, is rare as compared with amebic diarrhea or the other symptoms caused by infection with this parasite, and this fact should be thoroughly understood by the medical profession and more attention paid to the detection and treatment of amebiasis, as illustrated in the so-called healthy carrier of *Endameba histolytica*.

ANTIPNEUMOCOCCUS SERUM IN LOBAR PNEUMONIA

METHOD OF ADMINISTRATION AND DOSAGE

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There are a number of factors which must be considered before one can decide on the method of administration and the dosage of antipneumococcus serum in lobar pneumonia. The most desirable method of administration is the more easily settled of the two questions. The same reasons that govern the use of diphtheria antitoxin apply to a choice of method for antipneumococcic serum. The absorption of the antibodies is quite slow when they are injected subcutaneously or intramuscularly. If a serum is available that can be safely given intravenously, it should undoubtedly be so given and the whole amount of antibody injected be made immediately available instead of waiting for its gradual absorption and passage to the blood, which requires a period of from one to two days for its completion. If, however, one is afraid to give the refined or unrefined serum intravenously, it is useful but less so if given intramuscularly.

THE NUMBER OF DOSES

The first injection should be large, but before one can speak intelligently of dosage a unit of antibody must be agreed on. This has been done in the case of other serums in which there was a means of establishing standardized units, as in diphtheria and tetanus antitoxins. No intelligent person would now approve of giving the dose of diphtheria antitoxic globulin solution as so many cubic centimeters instead of as so many units.

The Hygienic Laboratory now simply requires a minimum amount of type I antibody in the serum, which is approximately 50 units per cubic centimeter. An antibody solution can be marked polyvalent when its content of type II and type III antibodies is less than 1 unit per cubic centimeter. Even when an attempt is made to have a potent polyvalent serum there is a great difference in the different preparations.

During the past year the Felton polyvalent preparations which we have used have varied as follows:

Type I antibody between 300 and 2,000 units per cubic centimeter.

Type II antibody between 100 and 800 units per cubic centimeter.

Type III antibody between 10 and 100 units per cubic centimeter.

If these refined preparations of antipneumococcus serum had been simply labeled polyvalent pneumococcus antibody, we would have given unwittingly one sixth of the type I antibody and one eighth of the type II antibody to some patients that we did to others. If the refined or unrefined polyvalent serum is to be used extensively in the future, as we hope and believe it is, the Hygienic Laboratory should require the units for each type for which the preparation is recommended to be stated on the package just as it is now for diphtheria, tetanus and scarlet fever antitoxins. If the federal government does not see its way clear to do this, the physicians themselves should demand it. Nothing will be more effective in causing the biologic plants to perfect their methods and to eliminate the horses producing a serum weak in antibodies than such a demand.

At present most of the solution of antibody sold is fairly potent in type I antibody but is weak in type II and has almost no trace of type III antibody. To affix the potency will indeed be an added burden to the producers, but in the end will benefit all concerned, for the better results will establish confidence in the value of type I and II antibodies as they now may be produced and later of the type III antibody when its method of production is improved. Thus the antibody preparations will be far more extensively used and more lives will be saved.

What is the Felton preparation of refined pneumococcus antibody used in the Bellevue, Harlem and New York hospitals during the past three years?

It is a solution of certain globulins of the blood serum of horses immunized by a series of intravenous injections of killed cultures of pneumococci. Instead of using solutions of ammonium sulphate to throw down the specific globulins, Felton utilizes the fact that these globulins when diluted in distilled water are precipitated and can then be separated on a filter. The precipitate is then brought into solution, further purified, and filtered. The potency tests are carried out both by Dr. Felton in the Medical School of Harvard University and by us in the research laboratory of the Department of Health of New York City. A unit is ten times the smallest amount which protects mice, on the average, from a hundred thousand minimal fatal doses of very virulent pneumococci. The serum and the pneumococci are mixed together in a syringe and immediately injected into the peritoneal cavity of a mouse. The unit cannot be as accurately estimated as the diphtheria antitoxic unit, but it can be sufficiently established for practical therapeutic purposes. The antibacterial serum neutralizes the specific soluble substance resulting from the growth of the pneumococci in the lung, and with the aid of the phagocytic cells destroys the pneumococci. The refined polyvalent serum naturally has no curative principles not in the unrefined serum, but it is freed from many useless and possibly antagonistic substances which are more or less deleterious and it is so much concentrated that 10 cc. doses of the type I and type II serums are usually sufficient. Besides the improvement due to refining, the present serum has the advantage that it is made from potent polyvalent immune horse serum, so that there is no halving of the potency such as there would be if a preparation of type I serum had to be added to an equal quantity of type II serum.

Are there any deleterious effects from the use of the present refined serum?

The present refined serum occasionally causes a slight serum sickness. This is usually merely a slight urticarial rash or a slight swelling of a joint. There may be added joint pains and a slight fever. A few preparations occasionally produce chills from the first dose when injected intravenously in amounts of from 5 to 10 cc., while others can be given to patients every eight to twelve hours in amounts of 20 cc. without any disturbance. These chills are not severe and do not cause any appreciable injury. There have not been any cases of hyperpyrexia following the chills.

Practically no reaction follows an intramuscular injection except an occasional attack of mild serum sickness but, as already stated, the absorption of the antibodies is so slow that when possible the intravenous method is always chosen.

How frequently should an injection be repeated? This depends on the amount of soluble toxic substance being formed or already formed. The quantity of toxic substance influences the persistence of the horse antibodies in the body of the pneumonia patient. This we have tested both in healthy persons and in those suffering from pneumonia. When sufficient time has elapsed after an intravenous injection for the dispersion of the antibodies throughout the fluids of the body, it is found that they are fairly stable in normal persons. The quantity in the blood diminishes gradually, so that at the end of a day from one half to three fourths is lost. With each successive intravenous dose, the amount rises and then falls again. In toxic cases of pneumonia the conditions are quite different; the antibody matching the type of pneumococcus causing the pneumonia is quickly partly or wholly neutralized by the specific soluble substance, while the antibodies in polyvalent serums specific for the other two types are only slightly affected and decline slowly as in a normal person. The amount to be given in a case of lobar pneumonia depends on its duration and severity, as this indicates in a general way the amount of toxic or immune substance probably present in the body.

Any patient in whom a pronounced bacteremia has developed will need much larger amounts than one in whom the blood is sterile. This is the reason much more serum is required as a rule in a late severe case than in an early severe case. The amount of antibody needed in some cases is very moderate in amount; in others it is large, and in a few it is beyond the possibility of giving. It is important, therefore, to estimate the needs of the individual patients. The supply of good antipneumococcic serum is now limited and its cost will always be high. Furthermore, very large doses at present are not altogether harmless. Large doses are also apt with some preparations to produce chills in a percentage of cases when moderate doses will not.

In order to clarify our ideas as to the amount of antibody required to neutralize all the pneumococcus specific poisonous substance, blood was taken from eleven patients with late toxic pneumonia and tested by us. Five of these were type I pneumonia cases and six type II. Of the type I cases, one showed traces of antibody in the serum, and one traces of specific toxic substance; in two, the toxic substance in 1 cc. of each of the blood samples neutralized one unit of antibody and in the fifth, 1 cc. neutralized five units. This would mean that in two of the toxic cases about 10,000 units and in the most toxic cases about 50,000 units would be required to neutralize the specific toxin in the body at the time the sample of blood was taken.

In the six very sick patients with late type II pneumonia, the blood of two contained only a trace. In the blood of two others the toxic substance required one unit of antibody per cubic centimeter of blood, and each of the remaining two required the enormous amount of 50 units of type II antibody.

The dosage required for the two most toxic cases would be approximately 500,000 units, which would require 500 cc. of our present polyvalent serum. These patients entered the hospital late and had septicemia; one did and the other did not receive serum and both died.

We did not test the type III patients carefully for the amount of toxic substance in their blood, for until recently we did not have any serum potent enough in specific antibody for type III to be of avail therapeutically in cases due to this type.

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Our serum from the horses has been increased gradually in potency as well as in the antibody preparations, as the result of improved methods of refining and concentrating. At the present time we can easily obtain refined polyvalent antibody solution of a strength of 1,000 units per cubic centimeter for type I, of 500 units for type II and of 100 units for type III. We find that the horses do nearly as well for each type of antibody when injected with strains of all three types as for the individual type when given a single strain. A potent polyvalent serum for type I and type II at least is now perfectly practicable.

Another means of getting information as to the proper dosage was to test the blood of the patients from time to time for antibodies. For this purpose we have tested a great number of bleedings from patients suffering from each of the three types. In every one of the type I cases tested and in the majority of the type II cases the blood became antibacterial after the first injection of 10,000 units of suitable antibody and, in the cases in which further injections were not given, remained so while under treatment.

DOSAGE

During the past twenty years much information has been gathered on the subject of dosage. The suggestions of Cole, Cecil, Baldwin and many others have been published. I think it is safe to say that the present series of cases reported from the Harlem Hospital by Drs. Bullowa and Rosenblüth have given the best opportunity up to the present time to study the proper dosage of antibody in the different types of cases. The severity of every case is rated on admission. In every case a blood culture is made on admission, and later as frequently as seems necessary. In many cases the amount of toxic substance or antibody in the blood has been tested both before and after the injection of the serum. The Felton antibody preparation is now very potent and seldom produces chills, and the units for the different types in the different preparations are definitely known.

Our opinion as to dosage is as follows: Every patient should receive on admission as nearly as possible 10,000 units of type I antibody and of type II antibody. If ever we have a sufficiently potent type III antibody in the serum, the same quantity of units should be given. As long as the temperature remains high or if septicemia is shown to be present, the injections should be continued every eight to twelve hours. When the case has been typed, a monovalent serum may be substituted for the polyvalent one. If the pneumonia is due to a group IV pneumococcus, it is well to stop with the third injection. The antibody for strains of this group of types is so feeble in the present preparations still that it is not wise to waste the polyvalent serum until we have a more abundant supply. The same reasoning applies to a type III case if the specific serum is not available.

If the temperature after dropping rises again above 102 F., the injections should be again given unless abundant antibodies are shown to be present in the blood or the temperature is known to be due to complications such as serum sickness, pulmonary abscess due to a streptococcus, or other conditions for which we would not expect any advantage from the antibody injections. Methods such as the quick macroscopic agglutination test perfected by Arlyle Noble should be used when possible to detect an abundance of antibody in the blood. If this is present it is wasteful and unnecessary to continue the injections. When unrefined serums are used, the number of units in each dose may have to be reduced because of the fear of the deleterious effects of such large injections of serum. Within a year or two a plentiful supply of refined antibacterial globulins should be available.

RELATION OF BACTEREMIA IN LOBAR PNEUMONIA TO PROGNOSIS AND THERAPY

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In the course of the pneumonia investigation that has been conducted during the past two years at Harlem Hospital, we have had occasion to make blood cultures on 500 patients with acute lobar pneumonia. For this communication I have analyzed the statistics of these cases and have attempted to interpret them from the standpoints of prognosis and serum therapy.

As to the incidence of bacteremia in lobar pneumonia, investigators have reached widely divergent conclusions. Some, such as Prochaska and E. C. Rosenow, have reported positive blood cultures as occurring with great frequency, the former having found them in 100 per cent of a series of fifty cases, the latter in 91 per cent of a series of 175. On the other hand, there are many who find positive blood cultures in a relatively small percentage of their cases. Notable among these are Schottmueller, who reports 23 per cent as positive in a series of 227, and Cole and his co-workers at the Rockefeller Hospital, who report 27 per cent as positive in a series of 728. The probable explanation of this disagreement as to the incidence of bacteremia lies in a difference in the type of clinical material studied and in the employment by one group of certain refinements and elaboration of laboratory technic which were not employed by the other group.

TABLE 1.—*Incidence of Positive Blood Cultures*

Total number of cases	500
Positive blood cultures	112
Percentage of positive blood cultures	22.4

Type	Total Number	Positive Blood Cultures	
		Number	Per Cent
I	149	50	35
II	95	30	31
III	66	17	25
IV	190	15	7.8

In our work we have not made an unusual effort to obtain a high percentage of positive blood cultures. We did not resort to the use of large quantities of blood nor did we make the cultures with any great degree of frequency. We employed the routine hospital technic in which 3 cc. of blood was divided among two hormone agar plates and one tube of vitamin broth in a dilution of 1:10. A blood culture was taken from each patient on admission. If it was positive, it was repeated daily. It it was negative, it was not repeated unless there was a sharp rise in temperature, a chill, a complication, or some circumstance suggesting bacterial invasion of the blood stream. We feel that with this simple technic we have probably missed some cases of transient or very mild bacteremia but that in the vast majority of those cases in which the septicemia was clinically significant we have recovered the organism.

In table 1, I have shown the incidence of bacteremia in the entire series and in each of the types. It will

be noted that the incidence for the whole series is rather low (22.4 per cent). The reason for this low figure is evident when one divides the series into types. Types I and II yielded, respectively, 35 and 31 per cent of positive cultures. These are typical figures. Type III gave a lower number than is usual, but it is the large group of type IV cases, of which there were 190, with only fifteen positive blood cultures, which makes so marked a reduction in the total incidence.

TABLE 2.—*Relation of Blood Cultures to Outcome in Untreated Cases*

	Negative Blood Cultures			Positive Blood Cultures		
		Deaths			Deaths	
Type	Number of Cases	Number	Per Cent	Number of Cases	Number	Per Cent
I.....	48	8	16	22	18	81
II.....	32	7	21	17	13	75
III.....	23	4	17	7	6	85
IV.....	102	9	8	3	3	100

We have been trying for some time to explain the fact that, while in most pneumonia series type IV organisms cause approximately 20 per cent of the total number of cases, our series shows about twice that number and has consistently done so for several years past. A possible explanation of this is the fact that most of our patients are from the West Indies, Porto Rico and the Southern states. Many have but recently come to this locality. Having been little exposed to pneumonia in their homes, they constitute a highly susceptible group. When they are brought in contact with the Northern population, a high rate of pneumonia incidence develops and they succumb even to group IV organisms, which are usually of low virulence and to which most of the local population is immune.

As to the prognostic value of a positive blood culture there is a remarkable lack of unanimity, and the reason for this seems to be closely related to the question of incidence. Those investigators who report a high incidence of bacteremia have invariably attributed little or no prognostic value to it, while those who report a low incidence regard it as a very serious prognostic sign. I believe this is due to the fact that the separation of cases by blood culture into positive and negative groups is too arbitrary and ignores the degree of bacterial invasion, which is really the more important factor. If

TABLE 3.—*Incidence of Positive Blood Cultures in Fatal and in Nonfatal Cases*

	Nonfatal Cases			Fatal Cases		
		Positive Blood Cultures			Positive Blood Cultures	
Type	Number of Cases	Number	Per Cent	Number of Cases	Number	Per Cent
I.....	106	21	19	43	29	67
II.....	63	12	19	32	18	56
III.....	42	4	9	24	13	54
IV.....	167	8	4	23	7	30

sufficient blood were used and the cultures made at short intervals, it is probable that all or most cases would yield positive blood cultures. But the significance of a few bacteria thus demonstrated should certainly be distinguished from a bacteremia readily shown in 1 or 2 cc. of blood.

We have estimated the influence of bacteremias of such degree by comparing the mortality in cases yielding positive blood cultures with the mortality in cases giving negative blood cultures, using only untreated cases so that the variable effect of serum might not influence our results. The difference between the two groups is very striking (table 2). In type I, 81 per cent of the patients showing positive blood cultures died, while only 16 per cent of those showing negative cultures died. In type II, 75 per cent of the patients with positive blood cultures died while 21 per cent of those with negative cultures died. While the number of deaths in the patients with blood culture positive for type III and type IV is much higher than in those with negative cultures, the total number of cases is too small to make these figures more than suggestive.

To determine the influence of bacteremia from another angle, we compared for each type the incidence of positive blood cultures in the fatal cases and cases in which there was recovery (table 3). In type I, with the incidence of positive blood cultures for nonfatal cases 19 per cent, the fatal cases showed an incidence of 67 per cent. In type II with the incidence of positive blood cultures in patients who recovered 19 per cent, the fatal cases showed an incidence of 56 per cent. In type III the incidence of positive blood cultures in cases in which there was recovery was 29 per cent, while in the fatal cases it was 54 per cent. In type IV the patients who recovered showed an incidence of 4 per cent, while in fatal cases it was 30 per cent.

TABLE 4.—*Results in Treated and Untreated Cases of Lobar Pneumonia*

	Untreated			Treated		
		Deaths			Deaths	
Type	Number of Cases	Number	Per Cent	Number of Cases	Number	Per Cent
I.....	70	26	37	79	17	21
II.....	49	20	40	46	12	26
III.....	30	10	33	36*	14	38
IV.....	105	12	11	85*	11	12

* These patients did **not receive** adequate doses of serum specific for this type.

From these comparisons it would seem that when there is present a bacteremia of such degree that it can be demonstrated in 1 or 2 cc. of blood the prognosis is exceedingly poor. This is true of all types, including group IV cases, in which we have recently observed some of our most virulent bacteremias.

It is interesting to note that, of 500 patients, 100 had on admission a positive blood culture and 400 cases had a negative blood culture. Of these 400 patients only twelve developed a positive blood culture and of these twelve only one survived. This would suggest that a late invasion of the blood stream is a very unfavorable prognostic sign.

Early in our work we were strongly impressed with the fact that our statistics taken in the usual manner, comparing mortality rates for treated and control cases, by type, did not adequately express the efficacy of the serum as it appeared to us at the bedside. We had often observed in patients who appeared very profoundly stricken the most impressively favorable results. This observation and the common knowledge that serum will frequently render the blood stream free from bacteria led us to inquire more closely into the relative effectiveness of the serum in the patients with bacteremia and in those without it. We hoped in this way to obtain more exact data as to the indications for treatment, and as to the better selection of those cases in which serum was likely to be most effective.

On comparing the results of our treated cases with those of our untreated (table 4), we found that in type I the mortality of untreated cases, which was

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37 per cent, was reduced in the treated cases to 21 per cent, a reduction of 43 per cent. In type II the mortality of untreated cases, which was 40 per cent, was reduced in the treated cases to 26 per cent, a reduction of 35 per cent. While these figures are impressive, they do not appear to have been sufficiently convincing, even in type I cases, to interest the medical practitioner in the use of this form of therapy.

TABLE 5.—*Lobar Pneumonia with Positive Blood Cultures: Results in Treated and Untreated Cases*

Type	Untreated			Treated		
	Number of Cases	Deaths—Number	Deaths—Per Cent	Number of Cases	Deaths—Number	Deaths—Per Cent
I.....	22	18	81	28	11	39
II.....	17	13	75	13	5	38
III.....	7	6	85	10*	7	70
IV.....	3	3	100	12*	4	33

* These patients did not receive adequate doses of serum specific for this type.

However, in the patients with positive blood cultures, the effect of serum treatment appears to be much more strikingly shown (table 5). In the type I group 81 per cent of the untreated patients died, whereas 39 per cent of the treated patients died, a reduction in mortality of 51 per cent. In the type II group, 75 per cent of the untreated patients died, while 38 per cent of the treated died, a reduction in the mortality of 49 per cent, which is almost as great as that effected in type I cases.

The question then arises whether the effect of the serum is limited entirely to those cases in which a bacteremia is present, or whether there is benefit also in the absence of bacteremia. On examining the results in the patients with negative blood cultures (table 6), we find in type I untreated cases a mortality of 16 per cent,

TABLE 6.—*Lobar Pneumonia with Negative Blood Cultures: Results in Treated and Untreated Cases*

Type	Untreated			Treated		
	Number of Cases	Deaths—Number	Deaths—Per Cent	Number of Cases	Deaths—Number	Deaths—Per Cent
I.....	48	8	16	51	6	11
II.....	32	7	21	33	7	21
III.....	23	4	17	26*	7	26
IV.....	102	9	8	73*	7	9

* These patients did not receive adequate doses of serum specific for this type.

while in treated cases the mortality is 11 per cent. The reduction here is much less marked than in the type I cases presenting positive blood cultures. In type II cases showing negative blood cultures, the results in the treated and untreated cases are identical, 21 per cent.

In order to compare the effect of early and of late treatment in the bacteremias, we separated the patients into groups of those admitted during the first three days of their illness and those admitted later. In type I the mortality in late cases was 42 per cent (table 7), while in the early cases it was 11 per cent. These figures suggested the importance of instituting serum treatment at the earliest possible moment. But in order to determine whether it was the serum treatment or merely early hospitalization which accounted for so marked a lowering of the mortality in the cases treated early, we studied the untreated cases in a similar way (table 8). In these cases, however, we did not find any such difference between patients admitted early and those admitted late. In type I the late cases presented a mortality of 80 per cent, while the early cases showed a mortality of 85 per cent. In type II the late cases and early cases showed an identical mortality, 71 per cent.

From the results of these studies, we particularly urge the use of serum in all cases showing a bacteremia. In type I and type II, the evidence in favor of serum appears to be convincing. In type III bacteremias we cannot recommend serum with the same assurance, but the prognosis here is so hopeless that it would seem proper to give the patient the slight chance that serum has to offer. With the more potent serums which have been prepared of late, this may not be so forlorn a hope as heretofore. In type IV cases with bacteremia, we feel very strongly that patients should be treated with a polyvalent serum of types I, II and III, because of the possibility that the typing has been incorrect. A case recently treated illustrates this point:

The patient was admitted on the third day of his illness. He had a consolidation of the right lower lobe. There were 301 colonies per cubic centimeter of blood. The pneumococcus recovered from the peritoneum of the mouse proved to be of type IV on two occasions. The organism from the heart's blood of the mouse, however, gave a perfectly clear-cut type I

TABLE 7.—*Cases Showing Positive Blood Cultures: Relation of Time of Beginning Treatment to Mortality*

Type	Within Three Days			After Three Days		
	Number of Cases	Deaths—Number	Deaths—Per Cent	Number of Cases	Deaths—Number	Deaths—Per Cent
I.....	12	4	33	14	6	42
II.....	9	1	11	4	3	75
III*.....	6	3	50	4	4	100
IV*.....	7	2	28	4	1	25

* These patients did not receive adequate doses of serum.

reaction. The patient was given two doses of serum and a blood culture was taken twenty-four hours after the first one was negative. The patient's temperature dropped promptly, and he made a complete recovery. We have reason to believe that without the use of serum this patient would have died. We have not seen recovery in any untreated patient with more than twenty-eight colonies per cubic centimeter of blood.

I believe that we are justified in drawing the following conclusions:

1. In untreated cases presenting bacteremia of such a degree that it can be demonstrated in 1 or 2 cc. of blood, the prognosis is definitely bad.

2. Type specific serum is indicated in all patients, but particularly in those with bacteremia. In those with negative blood cultures, it is indicated to prevent bacteremia.

TABLE 8.—*Cases Showing Positive Blood Cultures: Relation of Time of Admission to Mortality in Untreated Cases*

Type	Within Three Days			After Three Days		
	Number of Cases	Deaths—Number	Deaths—Per Cent	Number of Cases	Deaths—Number	Deaths—Per Cent
I.....	7	6	85	10	8	80
II.....	7	5	71	7	5	71
III.....	2	2	100	5	4	80
IV.....	1	1	100	1	1	100

3. All type IV cases showing bacteremia should be treated with serum because of the possibility that the organism may later prove to be type I or type II.

4. Serum treatment should be instituted at the earliest possible moment.

5. The effect of serum on fatality appears to be exerted largely in those cases showing a bacteremia, patients without demonstrable bacteremia being benefited relatively little.

116 West Fifty-Ninth Street.

USE OF ANTIPNEUMOCOCCIC REFINED SERUM IN LOBAR PNEUMONIA

DATA NECESSARY FOR A COMPARISON BETWEEN CASES TREATED WITH SERUM AND CASES NOT SO TREATED, AND THE IMPORTANCE OF A SIGNIFICANT CONTROL SERIES OF CASES *

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Practicing physicians have not as yet adopted the serum treatment for pneumonia. This has mainly been because the available serums have required relatively large intravenous injections, have been monovalent, and at times have occasioned severe reactions. Moreover, the beneficial effects have not been conclusively proved. In fact, the typing of pneumococci obtained from patients suffering from pneumonia has been abandoned in many hospitals, because it has been regarded as a procedure of little or no clinical value. But the results of treatment of type I patients by Avery and Cole and their co-workers, the recent studies of serums in experimental pneumonia in monkeys by Cecil, and the protection experiments on mice, all influenced Dr. Park to continue his efforts. We have used Felton's serum, refined in the cold, and made available through the Influenza Commission of the Metropolitan Life Insurance Company and Harvard University, and preparations of Dr. Banzhaf and of Dr. Sobotka of the Littauer Fund.

TABLE 1.—*Number of Pneumonia Cases Treated at Harlem Hospital from September, 1926, to October, 1927, by Type and Mode of Treatment*

Type	Total Cases		With Serum		Without Serum	
	Number	Per Cent	Number	Per Cent	Number	Per Cent
All typed cases	365	100	169	100	196	100
Type I	112	31	58	34	54	28
Type II	69	19	30	18	39	20
Type III	43	12	25	15	18	9
Type IV	141	38	56	33	85	43

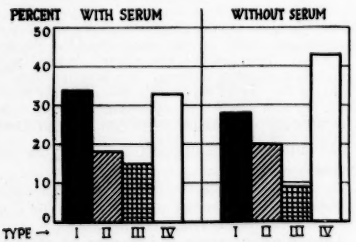

Chart 1.—Pneumonia cases treated at Harlem Hospital from September, 1926, to October, 1927, by type and by mode of treatment.

The evaluation of the effect of any therapeutic procedure in pneumonia is attended with certain inherent difficulties. Probably seven of every ten patients recover regardless of treatment, and therefore if one chances on a succession of favorable cases one is apt to attribute the benefit to the special treatment then in use. For example, we have encountered a series of thirty-one cases (not included in the present study), treated with and without serum, in which all the patients recovered. A short series of fatalities, unless carefully controlled and analyzed, may lead to a condemnation of what is really a very useful procedure.

Refined concentrated serums are desirable in order that the dose may be small and readily administered, without severe reactions. They must be polyvalent (several serums may be mixed) because the pneumonias resulting from pneumococci of different serologic types may be indistinguishable at the onset.

As the disease progresses, some patients must develop protection by their own mechanisms. Desperately ill patients may recover regardless of treatment, and critical termination may occur without warning. Invasion of the blood stream of patients with resulting bacteremia reveals definite lack of protection in the patient's blood. The results of protection tests or of blood culture studies, which might help reveal those patients in whom their own protective mechanisms have failed, are obtained too late for adequate guidance in administering serum. Because no one can foretell with certainty what patients may develop adequate protection in response to the pneumonic invasion, the benefit from treating patients is discovered only by comparing the results in a series of serum-treated cases with a similar series treated without serum.

Since we eliminated a chill reaction in the majority of our treated cases, we may conclude that the occurrence of a chill has small, if any, part in our result. For fair comparison, the influence of all other treatment must be balanced in two series.

ALTERNATION

There must be no selection of patients. At Harlem Hospital each alternate patient with pneumonia is placed in the serum series. Because of the structure and organization of our hospital, the male and female cases are conducted as separate units, with separate house staffs, but with the same visiting and resident physicians constantly in charge of all patients with pneumonia. It is not practicable to alternate the cases according to type on admission, as this might occasion a delay of many hours or days. The injection of a powerful polyvalent serum of types I and II, and soon of III also, assures prompt treatment of the cases selected for serum. Only the order of arrival in the ward determines whether a patient is to receive serum.

The delays in typing are occasioned by absence of sputum, by the time requisite for the growth of organisms in the peritoneum of a mouse, or for development of a subculture from its heart's blood. Sometimes a blood culture from the patient, or aspiration of a serous effusion or of the lung itself, furnishes the first information as to type.

REJECTION OF PATIENTS

We accept and retain as pneumonia patients those having pneumococcus infections of the lung with definite lobar involvement, as evidenced by unmistakable physical signs, fluoroscopy or roentgenography. We have been unable to separate with assurance the so-called confluent bronchopneumonias. If a patient dies of a surgical accident or complication, even though he has recovered from the pulmonary involvement, it is charged against the series. A patient is rejected from the series as not having pneumonia when it is discovered that he has not had a pneumococcus consolidation but such a condition as a tuberculous pneumonia with a high temperature. If the organisms recovered are not

* Read before the New York Academy of Medicine, Dec. 15, 1927.
* From the Medical Service, Harlem Hospital, Lewis K. Neff, director, the Littauer Pneumonia Fund of New York University, and the Research Laboratory, Department of Health, New York City.

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bile-soluble, the cases are rejected from the series. The patient's place is not filled, but the alternation continues as before in order to avoid selection. That there was no selection for either series is shown by comparing the number of patients of each type in the two series; they are approximately the same in the two. Patients came in early and late among the serum-treated and the controls, in about the same proportion. This is another test of the similarity of the series.

The time of the onset is dated from the occurrence of the chill or of sharp pain in the side, whichever came first.

TABLE 2.—*Time of Admission to Hospital After Onset of Disease*

Time of Admission	With Serum		Without Serum	
	Number	Per Cent	Number	Per Cent
Total cases	169	100	196	100
Admitted within:				
Less than four days	80	47	102	52
Four days and more	86	51	88	45
Time of onset unknown	3	2	6	3

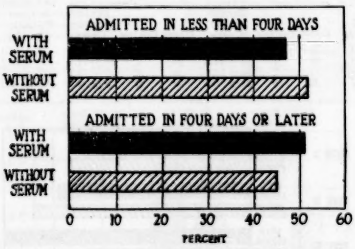

Chart 2.—Time of admission to hospital after onset of disease.

Except for the serum, all patients are given the same medical care in respect to drugs and nursing. Specific indications are treated in accordance with a definite standard plan. The house physicians are supplied with these instructions in writing and their work is constantly supervised, so that the standard treatment is followed. The method of administration of the serum and the dosage is described by Park and Cooper.[1]

SEVERITY RATING

To obtain an estimate of the severity of the illness for subsequent comparison of cases of like degree we have adopted the device of rating our patients in accordance with a definite plan. This avoids all reminiscing concerning the severity of the condition before treatment was begun. This rating has the advantage of not being confused by changes for better or worse in the course of the disease because it is given when the patient is first seen on rounds when all present agree to what have been chosen as obviously gross and readily appraisable objective departures from the normal (table 3).

The rating assumes 100 to be health, and for each of five categories a maximum of 20 may be subtracted. This rating expresses the percentage of health remaining, and indicates for us the reciprocal of the severity of the illness. It is not intended to indicate the chances for recovery, yet in a crude way it is prognostic (chart 3).

1. Park, W. H., and Cooper, Georgia: Antipneumococcus Serum in Lobar Pneumonia, this issue, page 1349.

For a portion of a lobe we subtract 3; for an entire lobe, 5; for an entire side, 10, and for the two lower lobes, 15. For pleurisy we subtract 5 for each side, and for respiratory rates above 34 subtract 5 and above 44 subtract 10.

TABLE 3.—*Severity Rating*

Health = 100. Each heading given equal importance; the maximum is always 20, excepting bacteremia, for which 20 is subtracted

	Subtract
Respiratory: Involvement: Portion of lobe	3
Entire lobe	5
One side	10
Both lowers	15
Rate: 35+	5
45+	10
Pleurisy: for each side	5
Nervous Condition: (headache, irritability, sleeplessness, delirium, apathy, coma) depending on severity up to	20
Circulatory Efficiency: Rate: 110+	5
120+	10
Cyanosis: depending on degree up to	10
Gastro-intestinal: Distention: depending on severity up to	10
Vomiting: depending on severity up to	10
Complications and Special Factors: age 50+	5
age 60+	10
Obesity, depending on degree	5–10
Pregnancy, depending on the month	5–10
Tuberculosis, depending on involvement	5–10
Bacteriemia	20

Condition of the Nervous System.—For disturbances in the nervous system we subtract up to 20, depending on the degree of prostration or irritation.

Circulatory State.—For rates of 110 or more 5 is subtracted; for rates of 120 or more, 10, and for cyanosis, up to 10, depending on the degree.

Gastro-Intestinal Condition.—For distention, depending on the degree, we subtract up to 10; for vomiting, also, we subtract up to 10.

Complications and Special Factors.—When the age is more than 50, we subtract 5, and when more than 60 years, we subtract 10. The subtractions for obesity depend on the degree, and for pregnancy, on the month; for tuberculosis, depending on the involvement, we subtract up to 10, and for bacteremia we subtract 20.

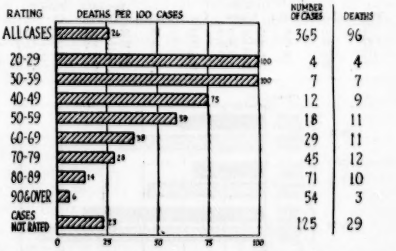

Chart 3.—Deaths per hundred pneumonia patients rated for degree of illness on admission.

To Dr. Louis I. Dublin and his staff of the Statistical Bureau, Metropolitan Life Insurance Company, we are indebted for the statistical study of our data. We have rejected the first 152 cases studied because of inadequate controls. In that series only early cases were treated (less than eighty-four hours) with serum. The mortality rate in the treated cases was apparently remarkably low. In our alternating series studied during the past year we had 401 cases of lobar pneumonia, of which twenty-eight were rejected because it was impossible to type them, and eight because of concur-

rent febrile diseases, such as scarlet fever and tuberculosis, or on account of an unreliable history of the onset. There remain 365 cases to be studied, 169 in the serum series and 196 in the controls; 220 were rated.

We were interested in determining the effect of the condition on admission on the mortality and whether

TABLE 4.—*Deaths per Hundred Cases of Type I Pneumonia Patients Treated with Serum and Without Serum, by Groups Rated for Degree of Illness on Admission*

	(a) With Serum			(b) Without Serum		
Rating*	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases
Total.....	58	13	22 ± 5.4	54	19	35 ± 6.5
Poor.....	6	4	67 ± 19.2	4	4	100 ± —
Fair.....	6	2	33 ± 19.2	11	6	55 ± 15
Good.....	24	3	13 ± 6.9	20	1	5 ± 4.9
Not rated..	22	4	18 ± 8.2	19	8	42 ± 11.3

* Good, from 70 to 100; fair, from 50 to 69; poor, from 0 to 49.

we saved with serum very ill patients who might have died without it. From table 3 may be seen in a general way that the rating on admission indicated chances for recovery. The type I cases rated were sufficiently numerous to classify (table 4) as good (70 to 100), fair (50 to 69) and poor (below 50). Of six patients rated poor we saved two patients with serum, while we lost all treated without serum; of those rated fair, we saved four of six in the serum group against six among eleven without serum.

Many have maintained that the excellent results reported with serum treatment in hospitals have been due to the early hospitalization rather than to the serum. In type I, a group for which we had a strong serum and in which the cases treated and the controls

TABLE 5.—*Deaths per Hundred Patients of Those Admitted Within Three Days of Onset*

	(a) With Serum			(b) Without Serum			Ratio of	
Type	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Difference in Case Fatality (a — b)	Difference to Its Error
I	29	6	21 ± 7.6	28	10	36 ± 9.1	—15 ± 11.9	1.3
II	11	2	18 ± 11.6	21	6	29 ± 9.9	—11 ± 15.3	0.7
III	11	5	45 ± 15.0	9	5	56 ± 16.5	—11 ± 16.5	0.5
IV	29	2	7 ± 4.7	44	7	16 ± 5.5	— 9 ± 7.2	1.3

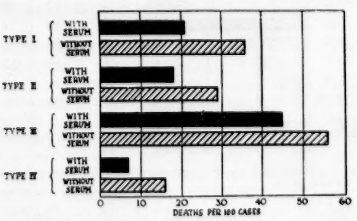

Chart 4.—Deaths per hundred patients of those admitted within three days of onset.

were sufficiently numerous, the mortality was 36 per cent among both early and late cases without serum; the benefit from treatment with serum was slightly greater in the early group, being 21 per cent in the early as against 24 per cent in the late. For the type II serum series the mortality among both early and late cases was less than for the controls (tables 5 and 6; charts 4 and 5).

Not only did the serum treatment reduce the number of deaths but it shortened the illness of those who recovered. If the number of days that elapsed (table 7; chart 6) between the onset of the disease and the return of the temperature to 100 F. are noted, it may be seen that in type I cases without bacteremia the period of illness was definitely shortened. Twenty-four per cent of the serum-treated cases and 9 per cent of the controls defervesced in less than five days; 68 per cent of the serum-treated cases and 52 per cent of the controls defervesced in less than ten days. After ten days only 8 per cent of the patients treated with serum continued to have a fever, as against 41 per cent of those not treated with serum. Certainly this was advantageous, as it meant a saving in hospital care and of subsequent invalidism. There were too few cases in which the blood culture was positive for type I to enable us to determine the average duration of illness. The short-

TABLE 6.—*Deaths per Hundred Patients of Those Admitted Four Days or More After Onset*

	(a) With Serum			(b) Without Serum			Ratio of	
Type	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases	Difference in Case Fatality (a — b)	Difference to Its Error
I	29	7	24 ± 7.9	25	9	36 ± 9.6	—12 ± 12.4	1.0
II	18	7	39 ± 11.5	16	7	44 ± 12.4	— 5 ± 16.9	0.3
III	11	7	50 ± 13.4	9	3	33 ± 15.7	+17 ± 20.6	0.6
IV	25	6	24 ± 8.5	38	2	5 ± 3.5	+19 ± 9.2	2.1

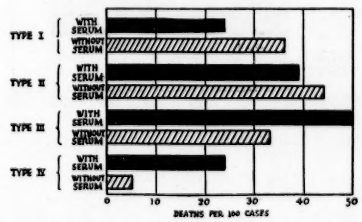

Chart 5.—Deaths per hundred patients of those admitted within four days after onset.

ening of illness, observed among the type IV cases, may have been due to mistaken classification or to an overlapping of antibody reactions.

This emphasizes again the advisability of administering polyvalent serum to all patients as early as possible without waiting for the result of typing. Serum not only saved more patients and shortened the illness of those who recovered, but apparently delayed death in those who perished, just as occurs in animal experiments. This gave them a better chance. We observed that of patients with the fatal type I pneumonia, 46 per cent lived for fifteen days or over in the series treated with serum, against 5 per cent who perished during that period among the controls, and 62 per cent survived ten days or more in the patients treated with serum, against 46 per cent among the controls. There were thirteen deaths in the series treated with serum and nineteen among the controls.

When all the cases early and late are grouped by types and the effect of the serum is studied it will be noted that those with type I and type II pneumonia for whom we had potent serum showed fewer deaths per hundred among those treated with serum (table 8; chart 7). The greater benefit from early treatment is revealed in the charts.

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In spite of the fact that we were impressed, as the research proceeded, by the beneficial effects of the serum, the question arose as to whether there was conclusive proof that the serum is of value. What test can we apply to our data to see whether proof is adequate and how can we determine the number of cases necessary for a fair evaluation? This leads us into a brief digression concerning what difference in results is statistically significant, and the meaning of the standard error.

If we take a number of samples from a given material (such as a population of hospital patients with pneumonia) and measure these samples for any particular quality (such as case fatality), the measures obtained will vary somewhat, from sample to sample, and if plotted in a diagram will appear as a bell-shaped curve such as

TABLE 7.—*Number of Days Elapsed Between Onset of the Disease and Return of Temperature to 100**

Number of Days Elapsed	With Serum		Without Serum	
	Number	Per Cent	Number	Per Cent
Total cases	38	100	29	100
Less than five days	9	24	2	7
Five to nine days	26	68	15	52
Ten days or more	3	8	12	41

* Recovered pneumonia patients treated (a) with serum and (b) without serum; type I cases, without bacteremia.

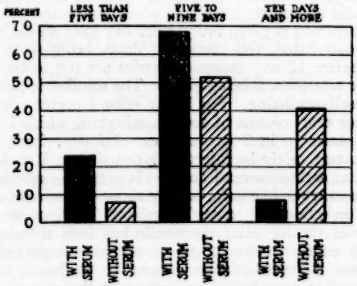

Chart 6.—Number of days elapsed between onset of the disease and return of temperature to 100; type I cases without bacteremia.

that shown in chart 8. If we do this for two separate materials, such as pneumonia patients treated with and those treated without serum, we shall obtain two separate bell-shaped curves. If the two separate materials are essentially different in their behavior as regards the quality measured, the peaks of the two curves will fall some distance apart, because the measure found most frequently in the one set will differ from the measure found most frequently in the other set. For example, the average case fatality in serum-treated patients is found to be different from the average case fatality in patients treated without serum. But if the difference is small, the peaks of the two curves will fall close together, and if the curves are rather flat, they will overlap and be practically indistinguishable.

The effect of using larger samples in such a case is to contract the two bell-shaped curves, making them high and narrow; the two separate peaks then become more clearly apparent, even though the distance between them remains the same.

This is the reason why it is necessary to have sufficiently large samples, for only thus can one detect with certainty relatively small differences in measurements obtained from two presumably different kinds of material.

TABLE 8.—*Deaths per Hundred Patients. (Deaths Within Twenty-Four Hours of Admission Excluded)*

Type	(a) With Serum			(b) Without Serum			Difference in Case Fatality (a − b)	Ratio of Difference to Its Error
	Cases	Deaths	Deaths per 100 Cases	Cases	Deaths	Deaths per 100 Cases		
I	55	10	18 ± 5.2	53	18	34 ± 6.5	−16 ± 8.3	1.9
II	26	6	23 ± 8.3	38	14	37 ± 7.8	−14 ± 11.4	1.2
III	24	11	46 ± 10.2	17	7	41 ± 11.9	5 ± 15.7	0.3
IV	54	7	13 ± 4.6	82	7	9 ± 3.2	4 ± 5.6	0.7

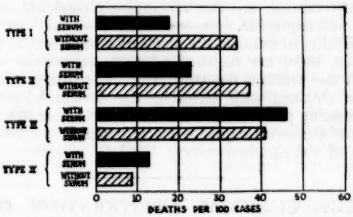

Chart 7.—Deaths per hundred patients (deaths within twenty-four hours of admission excluded).

Without going into technical details, I may explain that the relative spread or flatness of the curve is measured by what is called the standard error of the measurements, which is to the probable error as 3 to 2. In order that the difference between measurements in two separate materials shall be recognizable as definitely significant, the distance between the peaks of the two curves must satisfy a certain statistical test; namely, that the difference between the average measurements in the two cases shall be at least equal to twice the "standard error" of that difference.

In table 8 is a column giving the difference of case fatalities for serum-treated and for non-serum-treated patients. In this column there is appended to each entry a second figure, preceded by the sign ±. This figure is the "standard error" of the difference to which it is appended.

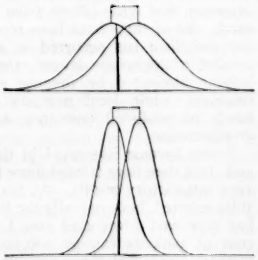

Chart 8.—Influence of size of sample on significance of difference between two rates.

Finally, there is a column showing the ratio of the difference to its standard error. Whenever this ratio falls below 2, we are not in a position to judge whether any significant meaning is to be attached to the difference; that is to say, whether it is purely accidental or due to a real effect of the treatment. The further this ratio is below 2, the greater must be our doubt.

In the type I cases we have practically obtained a result which is twice the standard error, 1.9. A greater difference in the percentage recovery of treated cases than those untreated may be accomplished by future

improvements in the serum, and by earlier administration. Even though the serum were to remain as it is, and the difference in the percentage of deaths the same as at present, 16 per cent, a greater number of cases would reduce the standard error and carry conviction of the value of serum treatment. In type II cases the difference is less significant. An effort must be made to make the serum more potent, larger doses may be needed, and more observations of its use must be accumulated. When for type I pneumonia the ratio of the difference in percentage fatality between serum-treated and non-serum-treated cases, to its standard error, becomes more than 2 or 3 it will be our duty to administer serum in all type I cases and to urge its administration on others.

We are aware that type III cases did not have sufficient treatment and that the antibody employed in type IV was negligible.

Finally, to evaluate the result of a treatment in pneumonia, there are required adequate comparable series with and without the treatment. We believe that we have obtained such series by the devices adopted of alternating patients and rating them on admission. The size of the series requisite is determined by a consideration of the standard error.

THE CHEMICAL OBLITERATION OF VARICOSE VEINS

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For the past fifteen years a number of European physicians have been treating varicose veins of the leg by the injection of various sclerosing solutions. Originated by Linser of Tübingen, Germany, in 1912, and later popularized in France by Sicard of Paris, the method is gradually replacing the operation of varicotomy in these two countries, as well as in Austria, Sweden and Denmark. Recently several papers on this method have appeared from England, and a few in the American literature. In each of these countries the method has slowly made headway in the face of considerable opposition on the part of conservative clinicians, who feared such complications as pulmonary embolism, sloughing of the tissues from perivenous injection, and toxic effects from some of the solutions used. All of these have been reported in the literature, but embolism has occurred so seldom as to be considered a negligible danger, toxic effects have been largely eliminated by the use of relatively harmless solutions, while local necroses occur chiefly in the hands of unskilled operators, as in connection with arsphenamine.

I first became interested in this treatment in 1922, and since then have treated more than 150 patients with very satisfactory results. At first the cases were carefully selected, but gradually the list of contraindications has narrowed down until now I feel that fully 95 per cent of patients can be successfully treated by this method. Some of these patients would be considered quite unsuitable for varicotomy by most surgeons, and at least half of the remaining 5 per cent would also be classed as inoperable.

While some of my patients were treated at the clinic, most of them were private patients. A few were treated at their homes at their own request, but the great majority were treated at the office. As a matter of fact, the greatest advantage of the injection method is its applicability to ambulatory patients, who usually pursue their occupations without interruption during the course of treatment. About twenty-five patients presented recurrences following a previous varicotomy, often as extensive as the original varicosities for which the operation had been done, and these invariably responded as well as the primary cases. Many had ulcers or eczema, which in no way interfered with the treatment, and which cleared up as rapidly as after operation. Various organic ailments, which would have made a general anesthetic very dangerous, did not seem to be aggravated by the injections. Nephritis and previous thrombosis of the deep veins are definite contraindications, of course, and should be ruled out first by the usual tests. Small sloughs have sometimes occurred, which separated and healed slowly, or required excision under local anesthesia. While this complication is annoying, it is never dangerous or incapacitating. No toxic reactions of any consequence have occurred, and of course no emboli. A transient edema of the foot and ankle is fairly common. The thrombosed veins are palpable and tender at first, but gradually absorb and disappear. Local recurrences are less common and less severe than after varicotomy, and are to be treated with additional injections. A thorough removal of all foci of infection, though often neglected, is the only really effective measure in the prevention of these recurrences.

For small veins I use the stock (1:500) solution of metaphen. This is a mercurial antiseptic of low toxicity, which has proved of considerable value in syphilis and septic infections when used intravenously. An injection is given every other day until all the veins are obliterated, the successive doses being 6, 9, and thereafter 12 cc. Saline cathartics are not to be used while metaphen is being given. The solution is painless and self-sterilizing. For larger veins I prefer a sterile 50 per cent solution of sodium salicylate, which I have had made up in 2 cc. ampules. Of this, from 2 to 4 cc. may safely be injected at one sitting, 1 cc. being used at each of several points. It is apt to cause burning and cramplike pain, lasting about one minute after each injection, but somewhat relieved by vigorous rubbing of the leg after the needle has been withdrawn. With either solution, a 10 cc. ampule of physiologic sodium chloride solution should be at hand, to be injected at once both into and under the skin in case of accidental extravasation. The prompt use of this simple precaution will prevent the sloughing that would otherwise be inevitable. An extra syringe and needle may be sterilized beforehand for this purpose.

The technic is important, and hence will be given in detail. It can be acquired only after long practice, and should not be attempted by those who find arsphenamine injections difficult, as the technical skill required to inject a tortuous, thin-walled, freely movable varicosity is often considerable. The patient sits upright on the table, with the legs horizontal. Two soft rubber tourniquets are applied, one about the ankle and one just above the knee, or higher if necessary. A 10 cc. eccentric tip Luer syringe and a 26 gage half inch needle are used. From two to four prominent points are selected and marked with ink, and the area is cleansed with 95 per cent alcohol rather than with iodine. The injections are made slowly, to allow time for distribution of the solution and for contraction of the veins. This forces out the contained blood and allows the solution to act in full concentration, thus completely destroying the intima of the vessel. A gauze sponge is pressed on each puncture site as the needle is withdrawn from it, and held long enough to prevent leakage.

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When all the injections have been completed, and before the contracted veins have had time to dilate again, a thick pad of cotton is placed over them, and a 4 inch Ace elastic bandage is firmly wound on, extending from one tourniquet to the other, the ends being fastened to the skin with adhesive tape. Ten minutes later the tourniquets are removed and the patient may go home. He is advised, however, to keep off his feet as much as possible until the next morning, and to apply a hot water bottle or electric pad during the night. This procedure is repeated every other day, the bandage being readjusted each time, until no more varicose veins can be found. A few days later the bandage is permanently removed, and after a final inspection the patient is dismissed with instructions to return in six months, and again at the end of a year, so that any recurrences may be dealt with before they become large. More sittings are required with metaphen than with sodium salicylate solution, so that the latter is preferable when the patient has but little time at his disposal.

Finally, it should be emphasized that the technic is exacting and requires much care. There is a knack about it that even some skilled surgeons never seem to acquire. When once thoroughly mastered, however, I know of no therapeutic measure that gives greater satisfaction to both physician and patient.

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BUCKET-HANDLE FRACTURES OF THE SEMILUNAR CARTILAGES*

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ROCHESTER, MINN.

In American literature comparatively little can be found on the surgical treatment of injuries to the cartilages of the knee joint, a fact recently commented on by Fagge.[1] However, concrete evidence of awakening interest in the subject is given in recent papers by Billington,[2] MacGuire,[3] Wallace,[4] Phemister[5] and others. British literature, particularly that emanating from England, contains many excellent articles. It is my opinion that, in proportion to the population, there are fewer injuries of this kind in America. A greater proportion of the English people participate in active field sports, such as soccer and Rugby. It may well be that the overindulgence of our citizens in motoring consumes so much of their time that there is none left for the strenuous types of recreation. Neither is there the large number of injuries to the knee in the coal mines of this country that there is in the British mines, since our miners do not work in the low seams that compel the British miners to labor in crouched positions. At Newcastle-on-Tyne, where Morison,[6] Martin[7] and their associates have reported large series of such injuries, most of the patients are miners.

My reasons for calling attention to the bucket-handle type of fracture are the frequency of its occurrence as compared to other types of fractures, and the fact that it may be overlooked at operation if one is not aware of its nature. Twice I have found this type of fracture when previous exploration had been reported negative.

The function of the semilunar cartilages is to fill in the areas at the margin of the knee joint and to increase in depth the area on the tuberosities of the tibia for the reception of the condyles of the femur. The internal cartilage is firmly attached to the capsule and is thus well anchored. The external cartilage is loosely attached to the periphery and may slide a little if nipped, thus avoiding injury. Recently Galeazzi[8] of Milan has placed more emphasis on the connection between the crucial ligaments and the cartilages. He states that clinical observations and anatomic experiments show that partial or complete tearing of the crucial ligaments often accompanies rupture of the cartilages. My clinical experience would bear out the observation that in some cases injury to the crucial ligaments accompanies injury to one or the other of the cartilages. In these cases, recovery is slow and uncertain, even though the fractured cartilage is removed.

The internal semilunar cartilage is injured from twelve to twenty times as often as the external cartilage. The freedom of the external cartilage from injury can be accounted for by its lax attachment to the capsule, and also because the rotary motion between the external condyle of the femur and outer tuberosity of the tibia is slight. The injury is most often seen in men in the active period of life. It is not always easy to determine whether the injury is in the internal or external cartilage. From a review of the records in the clinic, it would appear that injuries are produced in either cartilage in the same manner. In cases that I have seen, if the external cartilage is injured, the pain and tenderness is generally on the outer side, the pain often being referred to the outer portion of the popliteal space.

If the knee is partially flexed, and the foot rotated outward and abducted, the body weight is transmitted through an angle, and the anterior half of the internal semilunar cartilage (with the leg in this position) is placed at its deepest point in the joint. If extension is carried out without correction of the angulation due to the abducted position of the leg, the condyle of the femur may roll down on the meniscus, and the latter, being firmly fixed by its attachment to the periphery and to the crucials, will be caught firmly and fractured. The condyle crushes into the body of the cartilage, not at the extreme anterior portion but farther back, at about the juncture of the anterior and middle third. This produces a loop attached anteriorly and posteriorly which is carried over into the intercondylar notch. Morison,[6] in 1912, described this type of injury as "bucket-handle fracture," likening it to the old-fashioned leather bucket handle. In 1918, without knowing of this description, I described the same type of lesion and called it a "loop fracture." However, as Morison's term was used first, at the Mayo Clinic we always refer to such a fracture as a bucket-handle. I shall not discuss here other types of fracture (fig. 1) but shall confine my remarks to the bucket-handle type. I believe that Fagge is justified in his premise that this

* From the Section on Orthopedic Surgery, Mayo Clinic.
* Read before the Western Surgical Association, Omaha, Dec. 8, 1927.

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type may be primary to all others. As long as the loop remains in the intercondylar notch, extension is impossible, although flexion is usually possible to well beyond a right angle. If the loop remains in the notch, as it sometimes does for months, the swelling and effusion incident to the injury and the fracture subside; the patient may get about quite well but will complain of a feeling of insecurity. He may not note that full extension is impossible, and it may even escape the eye of the examiner unless the patient is told to stand erect and straighten both knees to the limit of his ability. It will at once be apparent that the affected knee when compared with the sound knee lacks a little of full extension. If the loop slips out of the intercondylar notch and joins the peripheral portion of the cartilage, full extension is at once possible. No doubt occasionally the loop heals firmly to the portion attached to the capsule and no further trouble is experienced. If union fails, the loop will from time to time slip into the intercondylar notch, producing typical symptoms.

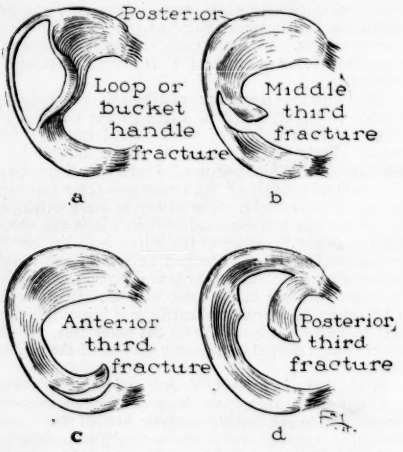

Fig. 1.—Common types of fracture of internal semilunar cartilage.

DIAGNOSIS

The outstanding features in a history of typical fracture of a semilunar cartilage are (1) injury; (2) pain and disability; (3) swelling; (4) recurrent lockings.

Injury.—The patient is usually a man in the active period of life. Except in rare instances there is a history of an injury usually sustained in a game or a vigorous type of work. Almost invariably, on close questioning, the patient will tell that at the time of injury the weight was on the affected leg, the knee was slightly flexed, either the foot was rotated outward or the body was rotated inward while the foot was held fixed, and the knee was somewhat adducted so that the internal lateral ligament was put on a strain. As extension was brought into play, severe pain was felt and the knee could not be straightened. I have known of cases in which the injury occurred when the patient merely turned over in bed without weight on the extremity; in one such case, both internal semilunar cartilages showed typical bucket-handle fractures that had occurred several years apart. Running downstairs and turning sharply at the newel post has been said in several cases to be the manner in which the injury was produced.

Pain and Disability.—The pain is usually excruciating and the patient may fall. The pain usually subsides when the fracture is reduced and the patient has the feeling of things being "right" in the joint. If, after attempts at reduction, the patient says that the joint still feels "out" he is probably correct, and the physician should be cautious about believing that a reduction has been accomplished until the patient feels that the structures are in their normal position. If the fracture is of the bucket-handle type, if the loop remains caught in the intercondylar notch and reduction is not attained, pain will be slow in leaving and flexion will persist. The pain is generally felt more keenly on the inner side in fractures of the internal cartilage, and on the outer side in the fractures of the external cartilage. It is due to the tension on the ligaments and not to the squeezing of the cartilage itself. The degree of disability will, of course, depend on the amount of pain and whether or not the cartilage is reduced. The first attack is usually the worst, and as the "dislocations" become frequent the pain is not so severe.

Swelling.—It is not easy to explain why the swelling occurs, but it is clearly a protective reaction and should not lead to any great concern. If effusion is excessive without absorption, aspiration may be necessary, but, as a rule, the swelling will disappear under tight bandaging or strapping. The swelling is due entirely to effusion of synovial fluid and only in the case of severe trauma is there any appreciable degree of capsular thickening. In cases of long standing in which there have been many recurrent attacks, the swelling becomes less with each attack and in some cases practically disappears. This increasing tolerance of the knee to the attacks is of interest.

Locking.—While the knee may be locked so that it can neither be extended nor flexed, the usual meaning in describing the condition in injuries of the semilunar cartilage is that the knee is caught so that extension cannot be completed. Patients do not always understand what locking means, many using the word "catching" instead. The cause of the locking in the cases in which the bucket-handle fracture is present is the loop that lies in the intercondylar notch definitely preventing extension. The posterior portion of the loop may inhibit flexion, but not to any extent. Locking of a knee as a result of a loose osteocartilaginous body is more transient and "catching" in nature.

DIFFERENTIAL DIAGNOSIS

Certain types of arthritis with synovial thickening may simulate the semilunar symptoms to a certain extent, but there is no history of injury, and capsular thickening is present. Also the catching is not so severe as in cases of fracture of the cartilage, and there may be other joints showing evidence of arthritis.

If the catching or locking is due to a loose body in osteochondritis dissecans or osteochondromatosis, the symptoms may be similar. In the early period of osteochondritis dissecans before the body is really cast off from the condyle the symptoms are confusing, but there is a sense of insecurity and instability that does not occur in the intervals between the recurrent lockings in fracture of the semilunar cartilage. Finally, the roentgenogram will show the osteocartilaginous bodies but will not show the fractured semilunar cartilage.

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Bucket-handle fractures may and often do cause the ordinary recurrent attacks of locking, pain and effusion. A positive diagnosis of bucket-handle fracture can be made only in those cases in which lack of extension persists, after subsidence of pain and swelling, with a feeling of insecurity.

In a recent review of 232 cases in which a semilunar cartilage has been removed at the Mayo Clinic since 1910, I found that there were records of seventy bucket-handle fractures. I am confident that if more careful descriptions of the type of lesion encountered had been made previous to 1917, more would have been classified in this group. Of the seventy bucket-handle fractures, sixty-eight were in the internal and two in the external cartilage. In the entire series there were 214 internal cartilages removed and eighteen external—roughly, twelve internal to one external.

MANIPULATION

In the early cases it is generally conceded that operation should not be resorted to until manipulation has been tried. The derangements that cannot be reduced are almost invariably due to bucket-handle fracture. In effecting reduction, it should be remembered that the position of the knee at the time of injury was one of adduction and that the tibia was rotated outward on the femur. Therefore, in reducing the derangement, the knee should be extended sharply with the muscles relaxed as much as possible and at the same time the tibia should be rotated inward on the femur. This will be the maneuver most likely to swing the loop back from the intercondylar notch. In the chronic recurrent cases the patients often become quite expert in effecting reduction, and the physician is wise to heed their advice about carrying out the manipulation.

OPERATION

Although the most rigid asepsis must be maintained, the argument that the knee has no inherent resistance to infection is not upheld by clinical experience. The anterolateral incisions, either internal or external, are most suitable for removal of the meniscus. In my experience the split patellar incision is inconvenient for the removal of either semilunar cartilage and should be reserved for exploration of the anterior compartment. I believe that a combination of the technics developed at Newcastle-on-Tyne and in Sir Robert Jones' clinic at Liverpool is best. The incision itself on the inner side should be as far back as possible without injuring the internal lateral ligament. When the knee is flexed to a right angle this ligament is well back, and an incision that is vertical and about 3 or 4 cm. internal and posterior to the patellar tendon is convenient and safe. This incision is made after the usual preparation and the application of a tourniquet with the knee flexed to a right angle and hanging over the end of the table. McMurray of Liverpool removes the cartilage expeditiously and is aided a great deal by the way he controls the leg. He sits directly facing the knee with his own knees covered either by a long sterile gown or draped in a sterile sheet. He grasps the foot of the affected leg between his knees and can rotate the foot, and thus the knee, inward or outward at will. If the cartilage is to be removed, it should be dissected loose anteriorly and held firmly with a strong pair of grasping forceps. Martin of Newcastle-on-Tyne has designed a useful instrument for this purpose (fig. 2). After the cartilage is dissected free as far back as possible from the internal lateral ligament, it should be swung over into the intercondylar notch and pulled forward and cut free posteriorly. It is surprising how completely the internal cartilage can be removed through this incision by careful maneuvering. If difficulty is experienced and it is thought that the entire cartilage should be removed, a posterolateral incision back of the internal lateral ligament can also be made and the posterior portion removed.

In exploring the knee for cartilage derangement, the bucket-handle type of fracture must be kept in mind. If there is a clear-cut history of locking, a diligent search must be made for a lesion to account for the symptoms. If the loop has slipped out of the intercondylar notch, nothing can be seen, and it is only by running a blunt-nosed instrument of some kind along the periphery of the cartilage that the tear can be made out and the loop demonstrated.

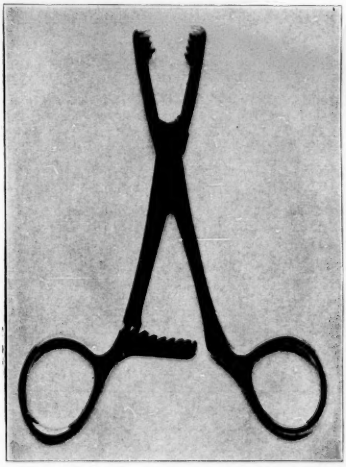

Fig. 2.—Martin's forceps for grasping the internal semilunar cartilage.

If the external cartilage is to be removed, the same type of incision can be used; however, it is more difficult to see the external cartilage satisfactorily than the internal one, although it peels out more easily.

CONCLUSION

Bucket-handle fractures of the internal semilunar cartilage are the most commonly encountered fractures in that structure. This type is also present occasionally in the external meniscus.

Vitamins in Tomatoes.—Tomatoes ripened in the dark have the same value in supplying vitamin C as those ripened in the sun, according to studies made by the home economics department of the university. It was also found that canned tomatoes, if they have not been in the cans for more than nine months, are as beneficial in supplying this food force as fresh fruit. Experiments also showed that tomatoes grown in greenhouses have as high a content of vitamin C as those grown under normal conditions in the field. The study of tomatoes was prompted by their wide use in diets, particularly in children feeding.—*Wisconsin M. J.* **27**:134 (March) 1928.

A MALIGNANT CONDITION OF THE PERICARDIUM *

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Diseases of the pericardium were reported in the literature as far back as 1825. From time to time since then medical writers have reported cases which in themselves have proved interesting from a standpoint of rarity, but no effort has been made to attempt to classify under definite headings the different types of malignant conditions of this important structure. Douglas,[1] in 1906, made a comprehensive study and recorded the frequency of malignant tumors of the pericardium, though in his article he took into consideration only growths arising primarily within the thoracic cavity.

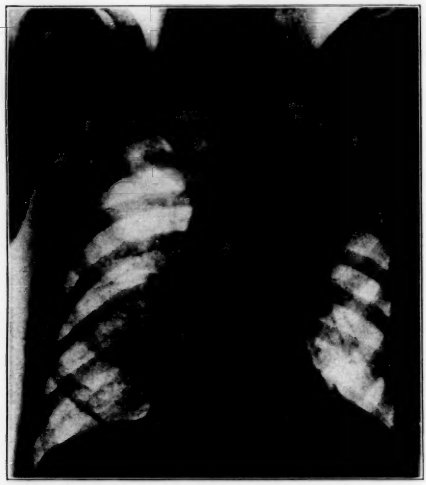

Fig. 1.—Roentgenographic appearance two weeks prior to death, showing no evidence of cardiac involvement.

In reviewing the literature, we find it rather replete with interesting and varied cases of new growths of the pericardium, even though a great majority of these cases were not malignant. Primary malignancy of the pericardium seems to be almost nonexistent, there being only three cases, reported by Nichols,[2] Sir William Broadbent[3] and J. C. Williams;[4] and even these, Douglas[1] suggests may have had their origin in the overlying thymus.

In order to give an insight into the difficulty encountered in making an antemortem diagnosis of pericardial involvement, a few reported cases may be cited in which the diagnosis was made only at the autopsy table: Forni[5] found his case after an autopsy on a subject who had died of cerebral hemorrhage; Nosen[6] reported a hemorrhage occurring within a cyst of the pericardium, the antemortem diagnosis being pulmonary embolus; Kaulich[7] saw a case of carcinoma of the pericardium in which the symptoms were those of a pericardial exudate, and Douglas[1] reported an interesting case in which a metastatic growth of the pericardium apparently had its origin from a new growth of the penis, which organ had been amputated some time previously.

The characteristic feature about cancerous growths of the pericardium is the peculiarity of its failure to set up a pericarditis, and it is this feature which renders a diagnosis of pericardial involvement rather difficult. Almost 100 per cent of the cases reported stress the fact that the visceral layer is not involved, and it is to be noted that cancerous masses in the heart muscle itself rarely extend as a direct growth into the pericardium. Out of ninety-two cases of malignant conditions in the thorax Douglas[1] reported only two as presenting secondary nodules in the visceral pericardium, and in neither of these two cases was a pericarditis evident. It is because of this peculiarity that the case reported here is considered unique in that the entire visceral pericardium is involved along with the parietal pericardium, together with a complete obliteration of the pericardial cavity. It is also to be noted that the myocardium is not involved. This is in contradistinction to all cases reported by previous observers, including the two mentioned by Douglas.

From a study of the cases in the available literature, we have arrived at the conclusion that malignant disease of the pericardium is always metastatic, the focus or primary seat being in an organ removed from the heart. Primary tumors of the pericardium do occur but are of the benign type and very often cystic in character.

REPORT OF CASE

History.—J. L. B., a white man, aged 42, a machinist, stated on admission to the Mercy Hospital that for the past five months he had felt a peculiar sensation of heaviness in his chest, described by him as a "tugging or pulling downward of his throat." There had been loss of weight and progressive weakness. The family history was negative for cancer, tuberculosis or syphilis. The past history gave the usual diseases of childhood; gonorrhea at the age of 16, and influenza and pneumonia in 1918.

The present illness began with a swelling of the left side of the neck accompanied by pain. About one month after the onset, he noted a "lump" on the left side of his head which had become larger until it attained its present size. He lost about 20 pounds (9 Kg.) during this time, and owing to progressive weakness had been unable to work. He recalled having had a similar type of swelling on the right side of the neck about five years before, accompanied by a diarrhea.

Physical Examination.—The patient was poorly developed and undernourished, weighing about 120 pounds (54.4 Kg.). The skin was dry and inelastic with a marked pallor. The musculature showed signs of rapid emaciation. There was a hard mass about the size of a walnut in the left parietal region, freely movable in the scalp tissue. It was tender to touch. The cervical glands of the left side were greatly enlarged but not matted together. Chest expansion was poor, especially on the left side. The apex beat was not displaced. The lungs

* From the Medical Clinic and Department of Pathology of the Mercy Hospital.

1. Douglas, J. S. C.: The Invasion of the Pericardium by Malignant Tumors Arising Primarily Within the Thorax, M. Chron. **45**: 207-222, 1906-1907.
2. Nichols: Malignant Disease of Pericardium Simulating Aortic Aneurysm, St. George's Hosp. Rep. **4**: 221, 1869.
3. Broadbent, William: Malignant Disease (Sarcoma of Pericardium), Tr. Path. Soc. London **33**: 78-81, 1881-1882.
4. Williams, J. C.: Primary Diffuse Small-Celled Sarcoma of the Parietal Pericardium, New York M. J. **71**: 537-540, 1900.
5. Forni, G.: Primary Tumors of the Pericardium, Tumori **4**: 523-558, 1914-1915.
6. Nosen, Hermann: Death from Pulmonary Embolus Through Pericardial Cyst, Deutsche med. Wchnschr. **51**: 1150-1151 (July 10) 1926.
7. Kaulich: Vrtljschr. f. prakt. Heilk. **73**: 78, 1862.

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presented coarse râles at the hilum, with emphysematous breathing at the right base. The left lung was flat at the base, with increased breath sounds at the apex. The abdomen and extremities were essentially normal; reflexes were all present.

Laboratory Analysis.—The Wassermann reaction was negative. Urinalysis showed a faint trace of sugar in one specimen, but all other specimens were negative for sugar. The excretion of phenolsulphonphthalein was 40 per cent in two hours. The blood count showed: total red cells, 3,650,000 per cubic millimeter; total white cells, 9,250 per cubic millimeter; differential count, small mononuclears, 25 per cent; large mononuclears, 2 per cent; neutrophils, 70 per cent, and eosinophils, 3 per cent.

Roentgen-ray examination showed the right half of the diaphragm driven far down below the level of that usually seen but smoothly contoured, while the left was drawn well up into the chest with a very dense adhesion in its central portion. No increase in the size of the cardiac or great vessel shadows could be observed. Roentgenograms taken from time to time up to several days before death were essentially the same.

Treatment and Course.—The tumor mass removed from the right parietal region proved to be epidermoid carcinoma.

Unfortunately, we were unable to obtain an electrocardiographic tracing, though the benefit to be derived from the use of this instrument in this particular case was a matter of conjecture.

The patient's condition grew progressively worse until dyspnea became acute, but there were no perceptible heart changes except as to rate. Decompensation rapidly set in with edema of the extremities, labored breathing and finally a cardiac death two and a half months after admission and seven and a half months after the onset of symptoms.

Autopsy.—The body was well developed but emaciated, and measured 166 cm. in length. Rigor mortis was not present, and the body was still warm. There was lividity over the back and buttocks, and marked congestion over the upper half of the body. There was no edema. The pupils were equal and regular and measured 3 mm. in diameter. There was a scar on the top of the head over the left parietal region measuring 5 cm. in length, from which a neoplasm had recently been removed at operation. There was also a small scar on the left side of the neck, 4 cm. in length, from which a gland had previously been removed. There was marked enlargement of the superficial and deep cervical lymph glands on the left side, beginning in the posterior mastoid region and extending down the side of the neck. The glands were markedly adherent and varied in size from a split pea to a marble. On section, the glands showed hyperplasia and white areas of infiltration by metastatic cancer.

The right pleural cavity showed a few old adhesions at the apex and approximately 100 cc. of straw colored fluid. The left side showed dense adhesions over the upper half of the lung and some old adhesions at the base. There was about 200 cc. of straw colored fluid. The left lung was partially collapsed.

The pericardial cavity was entirely obliterated by a dense mass of metastatic growth, involving the visceral and parietal pericardium. It was of varying consistency, the greater portion being firm, while a few small areas were friable and showed degeneration and softening.

The heart was of normal size and of very flabby consistency. The epicardium was covered by a mass of metastatic neoplasm covering the entire heart but not extending into or involving the myocardium. On section, the myocardium was a deep reddish brown, very flabby and friable. The endocardium and valves were normal.

The right lung was a pinkish slate color mottled with black areas of anthracosis and crepitant throughout. Section showed more marked congestions and edema in the lower lobes. The hilar lymph glands were enlarged; on section they showed anthracosis and were mottled with small white irregular areas of metastatic growth. The left lung was partly collapsed, of a deep slate color and of firm consistency, being somewhat nodular over the upper half and about the hilum. On section a new growth was found intimately connected with and surrounding the large bronchi near the hilum. Section showed it to be of firm consistency and pearly gray. In the small areas throughout the growth there was evidence of degeneration and necrosis. The hilar lymph nodes were enlarged, varying in size from a white bean to a marble; they showed anthracosis and diffuse white irregular areas of metastatic neoplasm. The glands in the posterior mediastinum were slightly enlarged, and on section showed a small amount of invasion by metastatic neoplasm.

The anatomic diagnosis was metastatic carcinoma in the cervical, mediastinal and bronchial lymph glands, and pericardium with obliterative pericarditis, toxic myocarditis, and primary neoplasm (epidermoid carcinoma), removed from the scalp at a previous operation.

Microscopic Examination.—The heart showed congestion, and metastatic epidermoid carcinoma involving the visceral and parietal pericardium but not involving the myocardium. There was toxic degeneration of the myocardium.

The left lung showed metastatic epidermoid carcinoma, secondary necrosis and abscess formation.

The bronchial, cervical and mediastinal lymph nodes showed metastatic epidermoid carcinoma.

Fig. 2.—Postmortem aspect of heart, showing: *A*, mass of metastatic epidermoid carcinoma of pericardium; *B*, myocardium without involvement.

SUMMARY

In this case the unusual features were metastatic involvement of the parietal and visceral pericardium with obliteration of the pericardial cavity and no involvement of the myocardium. The tumor, an epidermoid carcinoma, arose primarily in the scalp with metastasis to the cervical, mediastinal and bronchial lymph glands, left lung and pericardium.

From a clinical standpoint, a malignant condition of the pericardium, like chronic pericarditis, is almost impossible of antemortem diagnosis unless associated with acute pericarditis, a condition which rarely if ever exists and which if it does exist would only tend to draw the clinician's attention to the pericardium.

A review of the available literature shows that malignant disease of the pericardium is practically always metastatic, whereas primary growths of this structure are benign and very often cystic in character. The few cases in which the visceral pericardium has been involved by metastatic neoplasm have proved to be of

the nodular type, in contradistinction to this case, in which the neoplasm was decidedly diffuse.

Roentgen-ray examinations and electrocardiography seem to be of little if any value from a diagnostic standpoint.

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EFFECT OF PERMANENT PULMONARY COLLAPSE ON THE HEART

A PRELIMINARY CHEMICAL PATHOLOGIC STUDY *

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The widespread and increasing use of collapse therapy for the treatment of pulmonary tuberculosis has made it seem advisable to elucidate the changes incident to the use of this procedure in the organs of the body. The majority of the studies recorded in the literature up to the present time have been concerned with the changes in the lungs, which would obviously seem most important in elucidating the effect of this treatment on the disease and changes noted in this organ. That this organ, however, is not the only one concerned in the effects of the pulmonary collapse became strikingly evident after the introduction of thoracoplasty by Brauer, Wilms and Sauerbruch in 1911 and its subsequent more widespread use as a therapeutic procedure in pulmonary tuberculosis. Cardiac failure [1] is not an uncommon accident resulting from the use of this procedure. The changes in the lungs following collapse therapy are accounted for primarily by the collapse itself and its coincident vascular and lymphatic stasis, as well as the compressive effect on the diseased parts of this organ.[2]

Fig. 1.—Appearance of dog three months after extrapleural thoracoplasty on the right side.

The heart, on the other hand, is rarely primarily affected by tuberculosis, and only after extension from the lung or neighboring viscera does the disease involve this organ. The heart, however, is more likely to suffer changes of a secondary nature imposed rather by the conditions which are occasioned as a result of pulmonary collapse and disease. The latter deduction would appear to be apparent, more so from clinical observations than from experimental studies.

One of the not uncommon fatal complications of the surgical treatment of pulmonary tuberculosis by means of extrapleural thoracoplasty is cardiac failure. After the use of artificial pneumothorax this cause of death is far less frequent, probably because of the far less radical and drastic action of the latter as well as its more gradual institution so far as the collapse of the lung is concerned.

Many observations are recorded on the effect of collapse therapy on the lungs, but no record was found in the literature available in which accurate observations had been made in determining the effect of a long standing pulmonary collapse on the heart. The opinions regarding the effect of pulmonary collapse on the circulation of the lung are divided and may be briefly summarized as follows: The supporters [3] of Bruns maintain that the circulation is lessened in the compressed lung, while those [4] of Cloetta maintain that there is an equal (or even better circulation) in the pneumothorax as compared with the other lung. Corper, Simon and Rensch,[5] using quantitative methods in normal animals, did not find any immediate differences,

Amount of Lipoid Present in the Right and Left Ventricle of Normal and Thoracoplasty Dogs

	Normal Dogs				Thoracoplasty Dogs			
	Left Ventricle		Right Ventricle		Left Ventricle		Right Ventricle	
Animal	Amount of Fatty Acid per 5 Gm. of Tissue*	Per Cent of Fatty Acids	Amount of Fatty Acid per 5 Gm. of Tissue	Per Cent of Fatty Acids	Animal	Amount of Fatty Acid per 5 Gm. of Tissue	Per Cent of Fatty Acids	Amount of Fatty Acid per 5 Gm. of Tissue	Per Cent of Fatty Acids
1	0.1912	3.82	0.1396	2.79	1T	0.1081	2.16	0.1600	3.20
2	0.1154	2.31	0.1750	3.50	2T	0.0982	1.96	0.1114	2.22
3	0.1183	2.36	0.1385	2.77	3T	0.1106	2.21	0.1300	2.60
4	0.1896	3.79	0.1527	3.15	4T	0.1294	2.58	0.1538	3.07
5	0.1164	2.32	0.1458	2.91	5T	0.1032	2.06	0.1482	2.96
6	0.1916	3.83	0.1746	3.49	6T	0.1756	3.51	0.2276	4.55
7	0.1312	2.62	0.1460	2.92	7T	0.1314	2.62	0.1816	3.63
8	0.1374	2.74	0.1400	2.80	8T	0.1178	2.35	0.1708	3.41
9	0.1214	2.42	0.1376	2.75	9T	0.1070	2.14	0.2542	5.08
10	0.1531	3.06	0.1262	2.52	10T	0.1064	2.12	0.1802	3.60
11	0.1178	2.35	0.1858	3.71	11T	0.1248	2.49	0.1594	3.18
12	0.1068	2.01	0.1352	2.70					
13	0.1122	2.24	0.1252	2.50	Av.	0.1193	2.38	0.1706	3.41
14	0.1354	2.70	0.1254	2.50					
15	0.1172	2.33	0.1308	2.61					
Av.	0.1366	2.73	0.1452	2.90					

* The iodine number proved of no significant value and averaged 83.36 for the left and 82.3 for the right ventricle in the normal, and 82.44 for both left and right ventricle in the thoracoplasty dogs.

but after two to four weeks they noted a diminished circulation in the pneumothorax as compared to the normal lung and likened the change in the compressed lung to that occurring in the atrophy of disuse.

Obviously, all studies of the lung and heart in tuberculous persons lack value because of the complications introduced by the disease condition, so that only such studies as can be pursued in normal animals or individuals can throw light on the actual effect of pulmonary collapse on the various organs of the body. Since thoracoplasty is a permanent collapse procedure and has resulted in a number of cardiac deaths, I decided to study in experimental animals the result of monolateral extrapleural thoracoplasty on the organic condition of the heart and also to make note of any significant changes occurring in the lungs. A study of the organic changes in the heart is admittedly difficult but was finally resolved into a study of the chemical, histologic and electrocardiographic changes as being most valuable in determining evident changes which

* From the Research Department of the National Jewish Hospital and the Department of Chemistry, University of Denver.

1. Stöcklin, H.: Beitrag zur Behandlung der Lungen Tuberkulose mit extrapleuraler Thorakoplastik, Beitr. z. klin. d. Tuberk. **51**: 350, 1922.

2. An exhaustive review with references to the literature on the effect of pulmonary compression is given by John Alexander in the recent Gross Prize book on "The Surgery of Pulmonary Tuberculosis," Philadelphia, Lea & Febiger, 1925.

3. Brauer, L.: Ueber die operative Behandlung der Lungentuberkulose, Deutsche med. Wchnschr. **47**: 548 (May 12) 1921.

4. Sauerbruch, F.: Die Chirurgie der Brustorgane, ed. 1, Berlin, Julius Springer, **1**, 1920.

5. Corper, H. J.; Simon, Saling; and Rensch, O. B.: Am. Rev. Tuberc. **4**: 592 (Oct.) 1920.

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might be reflected on the final functioning of this important organ. Dogs were used as test animals, and a two stage Sauerbruch extrapleural thoracoplasty was performed on a series of these animals (fig. 1).

In order to obtain a comparable standard in using the methods of examination resorted to in this study, the heart was first studied in fifteen normal dogs and compared with the hearts of thoracoplasty dogs. For histologic and chemical study, specimens were taken from the right and left ventricle. The histologic specimens were examined after having been fixed in Zenker's solution and stained with hematoxylin and eosin, and after frozen sections had been made in physiologic sodium chloride solution [6] and stained by Herxheimer's method for fats.[7] A modified staining method for fats using oil red O and pyridine [8] did not prove as satisfactory in my hands as the Herxheimer method for fats. For chemical examination for fats, Kumagawa's method was used. A 5 Gm. specimen was taken from each ventricle, and to this was added 5 Gm. of chemically pure stick potassium hydroxide and 25 cc. of distilled water. The mixture was heated in a flask connected with a reflux condenser and the heating continued in the reflux until the entire tissue was dissolved, which usually required about forty-five minutes. After the mixture had cooled, 25 cc. of absolute alcohol was added and refluxing continued for two hours, after which another 25 cc. of absolute alcohol was added and refluxing continued for another hour. The purpose of this part of the treatment was to saponify the fats completely. After cooling, the mixture was acidified by the addition of 40 per cent sulphuric acid, and 200 cc. of distilled water was added to dissolve the salts formed. The mixture was placed in a separatory funnel and the lipoids extracted by means of six changes of petroleum benzin. After evaporation of the petroleum benzin on a water bath, the residual lipoids were weighed and the iodine number determined by Wijs' method.[9]

Fig. 2.—Appearance under low power of right ventricle of normal dog stained with Herxheimer's scarlet R stain and counterstained with hematoxylin. Attention is called to the absence of fatty degeneration in muscle fibers and the presence of fat around the blood vessel.

The results of the analysis of the right and left ventricle in the fifteen normal and eleven thoracoplasty dogs is recorded in the accompanying table.

A striking difference is noted in the lipoid content of the right ventricle of the thoracoplasty dog as compared to the right ventricle of the average normal dog, in that there is a decided increase in the lipoid content of the right ventricle of the thoracoplasty dogs evident in most cases. In addition, the contrast between the lipoids in the right as compared to the left ventricle of the thoracoplasty dog is even more striking, the lipoids of the left ventricle being even less in amount than the content of either ventricle of normal dogs. It is evident from these observations that thoracoplasty of about eight months' standing produces striking changes in the lipoid content of the ventricles of the heart as compared to each other, as well as compared to the normal heart. The iodine number did not show any significant changes in the quantitative relation between the unsaturated as compared to the saturated fatty acids present in the ventricles of normal and thoracoplasty dogs.

HISTOLOGIC CHANGES

Histologic study of sections of the right and left ventricles of the thoracoplasty dogs stained by Herxheimer's method revealed a definite grade of fatty infiltration and degeneration in the cardiac muscles of these animals as compared to the cardiac muscle of normal dogs (figs. 2, 3, 4 and 5). The grade of fatty infiltration and degeneration of the muscle of the right ventricle in the thoracoplasty dogs was more pro-

Fig. 3.—Appearance under high power of right ventricle in same dog as in figure 2.

6. MacNider, W. deB.: J. Pharmacol. & Exper. Therap. **17**: 289-324 (May) 1921.
7. Bullard, J.: J. M. Research **27**: 55, 1912.
8. Proescher, F.: Stain Technology: Oil Red O Pyridine, A Rapid Fat Stain, **2**: 60, 1927.
9. Woodman Food Analysis, ed. 2, New York, McGraw-Hill Book Company, Inc., pp. 166-167.

nounced than that of the left ventricle. It is interesting to note that, even though the chemical analyses of the left ventricle did not reveal any increase over normal but rather a diminution in fats, there did exist a fatty degeneration and infiltration of the cardiac muscle. This, however, becomes clear in the light of the fact

Fig. 4.—Appearance under low power of right ventricle of thoracoplasty dog stained with Herxheimer's scarlet R stain and counterstained with hematoxylin. Note fatty degeneration, especially distinct in the muscle fibers as seen in figure 5.

that "microscopic examination of specimens stained with the specific fat stains gives no indication of the amount of fat contained in a degenerated tissue." [10] Yet it is evident from both chemical and histologic examination that the heart in the thoracoplasty dogs has suffered evident pathologic change displayed as a decided fatty degeneration of the cardiac muscle, and that in addition there is a decided disproportion between the right and left sides of the heart that requires further elucidation.

ELECTROCARDIOGRAPHIC CHANGES

There exists at present a variance with regard to the interpretation of the normal electrocardiogram, but the views most generally recognized are that the waves noted are manifestations of excitation and contraction of heart muscle, or that the waves result from electrical changes accompanying conduction of the impulse and contraction of the muscle.[11] The electrocardiogram is therefore the most sensitive test at present available for the determination of muscular organic changes in the heart during life, and in most cases is the only one revealing slight and early changes. It was therefore chosen as a method suitable for studying the heart of the thoracoplasty dogs as compared to the normal dog. In order to obtain successful electrocardiograms, the dogs were given 1.4 Gm. of soluble barbital subcutaneously about thirty minutes before the test was made. The administration of this drug did not have any influence on the electrocardiogram in normal dogs. In all the eight dogs studied, there was a distinct change in the electrocardiogram about eight months after the institution of extrapleural thoracoplasty (figs. 6 and 7) as pointed out by Dr. George F. Piltz, who kindly cooperated in making the electrocardiograms and in interpreting them. Dr. Piltz found that all of the eight dogs studied showed evidence of a right cardiac preponderance and three of them revealed evidence of some myocardial change.

10. Wells, H. G.: Chemical Pathology, ed. 3, Philadelphia, W. B. Saunders Company, p. 401.
11. Willius, F. A.: Clinical Electrocardiography, Philadelphia, W. B. Saunders Company, 1922, p. 37.

COMMENT AND CONCLUSIONS

Fatty changes of the heart occurring in the dog as a result of pulmonary collapse have been demonstrated by quantitative chemical and histopathologic staining methods. On theoretical grounds, collapse of the lung through thoracoplasty, combined or uncombined with phrenicotomy, should be accompanied by marked changes in the cardiac musculature, particularly of the right side of the heart. The extra burden imposed on the right ventricle is due to the constriction of the blood path through the lung owing to the pulmonary collapse and the additional effect of the partial abolition of the intrathoracic negative pressure through phrenicotomy and thoracoplasty. This effect would ensue as a natural consequence of the relative anemia of the constricted lung.[9] The degenerative fatty changes which were observed in the frozen cardiac section stained by Herxheimer's method support the theory that marked cardiac changes should occur. The electrocardiographic evidence showing a right predominance is in agreement

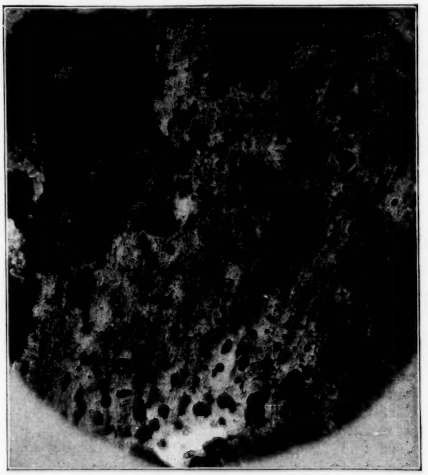

Fig. 5.—Appearance under high power of right ventricle in same dog as in figure 4.

with the chemical and histopathologic observations. The inverted T wave found in three out of the eight dogs is suggestive of degenerative changes and in accord with the histopathologic and chemical data. On the other hand, these observations would be difficult to interpret if Cloetta's assertion that there is a better

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blood supply of the collapsed lung is correct, for then no barrier to the cardiac outflow would be interposed and no reason for any degenerative changes of the right half of the heart or even right dominance would exist. In this connection, it is interesting to observe that Karl Schlaepfer [12] in his experimental work on the ligation of a branch of the pulmonary artery combined with phrenicotomy in the dog found a ligation fibrosis highly satisfactory from the therapeutic standpoint by putting the lung at rest by direct action; he says that there was no cardiac embarrassment following this procedure. The lack of any unfavorable effect on the cardiac circulation is attributed by this experimenter to the dila-

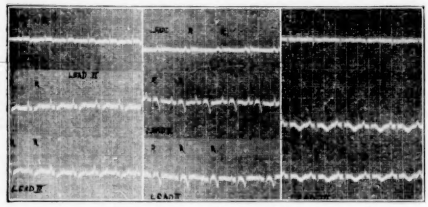

Fig. 6.—Preponderance of right ventricle, with tendency to inverted T wave, in thoracoplasty dog.

tation of the pulmonary vessels which was observed on histopathologic studies. He, however, did not include cardiac chemical examination or fat staining among his methods of study.

On the other hand, Reid [13] reports an interesting observation on a dog that had lived two and one-half years after constriction of the common pulmonary artery by means of an aluminum band. Electrocardiographic examination during life and a careful postmortem examination have been recorded for this dog. The report, though brief, indicates that this animal developed a right ventricular hypertrophy distinctly evident post mortem as a result of the partial occlusion of the pulmonary artery.

While it is true that interpretation of fatty changes is subject to controversy, the pathologic significance of such changes is of importance. It has been demonstrated by pathologists [11] that no definite correlation between the amount of visible lipoids and quantitative chemical analyses exist; some organs showing on histopathologic examination a great increase of fats may show quantitatively an actual decrease as regards the normal fat content. This is explained by some on the chemical basis that most of the normal fat found in tissue is held in chemical union and seems to be part of the cell, for it cannot be removed even by starvation; starved dogs give a normal fat content on examination of the liver. However, when fatty degeneration occurs, i. e., when the parenchyma cells undergo necrosis, these fats become more visible. This point is also substantiated by MacNider,[14] who found a relationship existing between the amount of stainable lipoid material in the renal epithelium and the toxicity of the anesthetics used (chloroform or ether). This is suggestive for the interpretation of my observations in pulmonary collapse dogs, in which were noted: (*a*) quantitative increase of fat in the right ventricle; (*b*) increase of the visible lipoids (fatty degeneration), and (*c*) dominance of the right heart with inverted T wave in three out of the eight dogs observed electrocardiographically.

These conditions all indicate an effort on the part of the heart to compensate; the increase in lipoids in this case probably represents a degree of parenchymal degeneration.

12. Schlaepfer, Karl: Ligation of the Pulmonary Artery, Am. Rev. Tuberc. **10**: 35-66 (Sept.) 1924.
13. Reid, M. R.: Partial Occlusion of the Pulmonary Aorta and Inferior Vena Cava with the Metallic Band: Observations on Changes in the Vessel Wall and in the Heart, J. Exper. Med. **40**: 289-291 (Sept.) 1924.
14. MacNider (footnote 6): Naturally Nephropathic Animals, J. Pharmacol. & Exper. Therap. **20**: 365-385, 1923.

THE USE OF CARBON DIOXIDE SNOW IN TREATING BLASTOMYCOSIS

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I have examined the literature and various textbooks, and have made a search for reports of the use of carbon dioxide snow in the treatment of blastomycosis, but I find that little mention has been made of it. The early eruption on the skin occupies an area usually restricted in size and when thus localized it may successfully be treated with carbon dioxide snow, a substance now at hand even in most distant towns and at the command of every general practitioner. If, however, the disease is neglected, it soon assumes grave proportions; it may resist even the most active measures and result disastrously.

Fig. 1.—Blastomycosis of left cheek.

The diagnosis of blastomycosis is not of great difficulty nor does it require a large amount of laboratory procedure or equipment. A microscope, a glass slide, a cover glass and a bottle of 10 per cent sodium hydroxide are all that is necessary. The disease begins as a small papule or papulopustule which soon acquires a peculiar verrucose appearance and tends to extend its

growth peripherally. As this increase in size takes place there may be seen about the border minute pus pockets which can be expressed by pressure. The border of the lesion is raised and sharply circumscribed, and there may be a narrow halo of erythema surrounding the patch. The onset of the disease is gradual, with a much slower course than the development of furuncles or carbuncles.

Fig. 2.—Slight scar on left cheek after use of carbon dioxide snow.

In the pus expressed from the bordering minute abscesses, one can find the blastomycetes, which are rounded or slightly elliptic bodies of the yeast family. The organisms are from 5 to 20 microns in diameter and may appear as single cells, budding cells, or closely associated cells of equal size. After a few weeks' growth there may be budding forms or the branching long tendril-like mycelia in the cultures. When the pus is closely examined under the high power dry objective of the microscope after a few drops of 10 per cent sodium hydroxide has been added to dissolve the mucous and the intercellular membranes, the organism is seen as an elliptic body, the border of which appears to be made of a transparent tube about 3 or 4 microns in diameter, so bent that its ends come in contact at one side of the organism. This tube surrounds a central area, which in some cases is clear and in others slightly granular. Sometimes a daughter cell may appear to be budding from the mother cell, so that the smaller cell seems to have been squeezed out at the point where the ends of the tube about the border meet.

When a slowly progressing lesion is thus observed, and if the organisms are recovered and observed under the microscope, one may feel certain of the diagnosis. Among the most common methods of treatment are the use of potassium iodide by mouth, from 10 to 30 grains (0.6 to 1.8 Gm.) three times a day, accompanied with large quantities of water; the roentgen ray in one erythema dose repeated at intervals of from three to four weeks; the electric cautery, and radium. In all these methods, however, the end-results are often disappointing. It is at this early stage that the most satisfactory results may be obtained with the use of carbon dioxide snow. Sutton [1] is one of the few who use the snow or even mention it in the treatment of blastomycosis, and he merely records that "deep and thorough freezing with carbon dioxide snow often proves helpful."

I wish to report my results in two cases of localized blastomycosis, which yielded rapidly and completely to carbon dioxide snow therapy and in which the lesions have remained clear without any sign of recurrence for more than a year.

REPORT OF CASES

CASE 1.—J. D., a white man, aged 29, a cigar maker, had a patch of blastomycosis 8 mm. (5/16 inch) in diameter on the left cheek. The lesion had been present for about a month when first seen. At first various approved methods of treatment were instituted, including the roentgen ray, arsphenamines, potassium iodide, and copper sulphate both locally and internally, but during this period of eight weeks it continued slowly to increase in size. The patient disappeared from the clinic for two months, and when he returned the patch had increased to 18 mm. (11/16 inch) in diameter, and showed many more minute abscesses round its border (fig. 1). At this time the entire lesion was frozen for ten seconds under moderate pressure, so that the frozen area extended about 3 mm. (1/8 inch) on either side of the patch. A crust formed in a few days, which, when removed at the end of two weeks, left a clean granulating ulcer. This ulcer gradually healed until there was only a hardly visible scar which had the appearance almost of normal skin over the area formerly infected (fig. 2). A small spot at the upper border of the former lesion developed a crust and was similarly frozen for ten seconds; after three weeks the entire area was clear and is so today after more than a year has elapsed.

CASE 2.—W. A., a white laborer, aged 34, had had an infection of the foot lasting more than eight months. It had been treated by most of the methods previously mentioned but was still very active. There had been little progress in the size of the lesion during the past three months, nor was there any regression during that time. The area was frozen for fifteen seconds with moderate pressure, and after three weeks the crust was ready to be removed, leaving a rapidly healing ulcer.

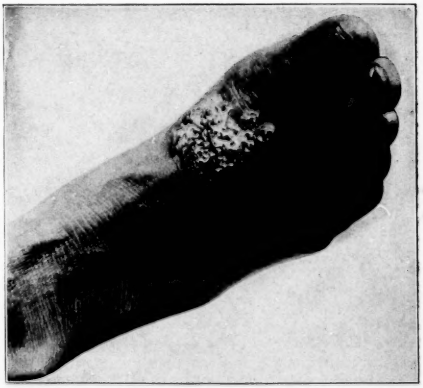

Fig. 3.—Blastomycosis of right foot treated with carbon dioxide snow.

1. Sutton, R. L.: Diseases of the Skin, ed. 3, St. Louis, C. V. Mosby Company, pp. 1017-1018.

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After another two weeks the ulcer was healed, leaving only a slight scar, and has remained so now for more than twelve months.

TECHNIC

The only apparatus necessary in this form of treatment is the tank of carbon dioxide commonly used by the druggist for refrigeration of his fountain drinks, a square chamois skin, an unsharpened pencil, and a large tubular ear speculum. The tank is laid at an angle with the valve downward. The chamois skin is made into a receiving bag over the outlet of the tank valve. The valve is opened and the gas collected in the form of snow in the chamois skin. This is then packed into the ear speculum and tamped down with the unsharpened pencil to make the shape of the speculum into a firm, almost icelike pencil of the carbon dioxide snow. This pencil is then held with a small piece of chamois skin to keep it from freezing the fingers of the operator, and with a firm pressure is applied to the surface of the lesion for from ten to fifteen seconds. I feel sure that the results obtained in these early cases of blastomycosis warrant the incorporation of this method with other approved methods in the treatment of blastomycosis.

30 North Michigan Avenue.

TULAREMIA

REPORT OF A FATAL CASE, WITH POSTMORTEM OBSERVATIONS *

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The autopsy report presented here is of particular interest since, from the careful records of numerous reports widely distributed through our country, Francis [1] states that this is the earliest one in man so far reported. This autopsy, exactly sixteen days after the known exposure to and inoculation from a diseased rabbit, is several days earlier than any of the others reported, and the lesions found copied to a remarkable degree those found experimentally in inoculated animals, as well as those occurring spontaneously in animals.

REPORT OF CASE

Onset, Incubation, Sequence and Clinical Course.—V. B., a white man, aged 53, married, who conducted a fox farm close to the north shore of Lake Superior, near the village of Toimi, July 25, 1927, cut up the carcass of a dead rabbit brought in by the cat, and fed it to his foxes. His wife stated that while doing this he made a slight wound on his left index finger. She thought that he made no effort at cleansing his hands at that time. The extreme infectivity of tularemia is evidenced by the fact that the very next day he was not well enough to work with comfort; on the succeeding day he had severe headache, chills and fever and remained in bed. He was taken to the hospital in Two Harbors, July 28, where he remained only a short time. Typhoid was suspected; fever and cyanosis were noted; the patient was very ill. He remained in the hospital only a short time, and left against advice. While he was at home the illness grew progressively worse, and he was brought to the Duluth Clinic, August 3.

Because of his cyanotic, semistuporous state, the patient was transferred at once to the ward at St. Mary's Hospital, where he was admitted with a diagnosis of bronchopneumonia. Tularemia [2] was not considered until August 5, when the curious course of the disease and the appearance of the patient led the resident house physician, Dr. S. H. Koop, to check up on the body markings. He then found the almost hidden finger ulcer, the very enlarged left epitrochlear glands and lesser gland enlargement in the left axilla. Blood specimens were sent at once to the state board of health at Minneapolis, but before the report (which showed a positive agglutination to *Bacterium tularense* in a dilution of 1:160, and a partial agglutination in 1:320) came back the patient had died, and on August 9 had come to autopsy.

Gross and Microscopic Observations.—The middle finger of the left hand still showed a definite superficial ulceration, from which pressure caused a purulent whitish material to exude.

Fig. 1.—Gross appearance of spleen: some of the nodules have been retouched. Note that many are just beneath the capsule and have a tendency to coalesce.

The epitrochlear gland on the left was unusually large; there were a few enlarged glands in the left axilla, but none elsewhere.

The peritoneal serosa was congested but smooth. The pleura on both sides showed extensive old fibrous adhesions, involving the diaphragm in like manner bilaterally. Definite whitish nodules, measuring up to 0.4 cm. in diameter, were found scattered over the pleura of each lung. Since these nodules are characteristic of tularemic infections as seen in man and in the usual animals infected, they will be described separately. Their resemblance in some ways to the tubercle caused by Koch's bacillus is quite striking.

The heart weighed 415 Gm. This hypertrophy arose from an obvious aortic stenosis—the aortic cusps were partially adherent, rigid and calcified—and only a slitlike opening obtained. The coronary vessels showed a few cloudy patches; the myocardium was somewhat pale.

Both lungs showed an extensive bronchopneumonia, with very little air remaining, especially in the lower lobes. The mucosa of the bronchi was very congested; the bronchial

* From the Pathological Department, St. Mary's Hospital, and from the Duluth Clinic.

1. In a personal communication to the authors, Dr. Edward Francis of the United States Public Health Service states that in one case the autopsy was held eighteen days and in another twenty-six days after the onset, while in the third case it was held five months after the infection.

2. Four other cases have recently been observed, discussed and reported (Rutledge, L. H.: A Fatal Case of Tularemia in Minnesota, Minnesota Med. **10**: 97 [Feb.] 1927) in the northern part of Minnesota. There was one other death.

glands were enlarged and edematous. The whitish nodules seen typically subpleurally extended throughout the lung substance, but were more densely conglomerated in the most pneumonic areas. The largest nodules were about 0.5 cm. in diameter; they ranged down to the limits of visibility.

The spleen weight was about 310 Gm. (about twice the normal). The capsule was thoroughly studded with the whitish nodules of somewhat irregular shape, but most prominent and typically seen subcapsular. On cut surface enormous numbers of these nodules appeared and, as in the lungs, tended to coalesce. The organ as a whole was soft and easily torn; the pulp between the nodules appeared congested and dark red.

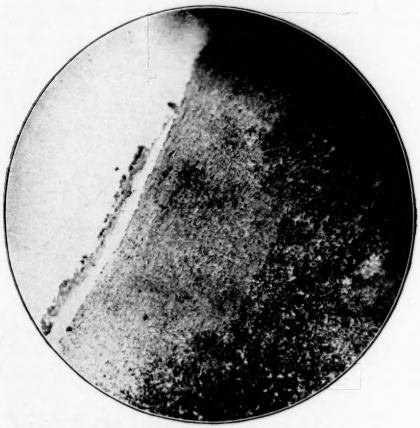

Fig. 2.—Low power magnification of spleen. Note the necrotic area, which is slightly concave, and the fibrinous membrane over the necrotic area.

The capsule sheath of the kidneys stripped easily, and on cut surface were seen a few small nodules similar to those of the spleen and lungs. The kidney tissue was pale, and showed marked cloudy swelling. The ureters and bladder, testes and prostate were essentially negative in regard to pathologic changes.

The external surface of the liver was smooth, and showed a few whitish nodules, similar to those seen in the spleen. On cut surface the markings were fairly distinct, but the tissue was cloudy and pale, and studded with numerous whitish nodules, surrounded by a hyperemic area.

The stomach contained greenish mucous material, and a large, irregular chronic ulcer was noted on the posterior wall, near the greater curvature, which measured 2 cm. in diameter. The mucosa of the fundus showed numerous yellowish patches, measuring up to 0.5 cm. The duodenum and small intestine contained a small amount of greenish material. The mucosa was congested, and Peyer's patches and the solitary follicles were swollen and markedly congested. The mucosa showed numerous small yellowish patches, similar to those found in the stomach, but generally smaller and surrounded by hyperemic areas. The large intestine gave evidence of the same swelling of solitary follicles, while the mesenteric and retroperitoneal glands were enlarged and on cut surface showed the same whitish nodules that were typical of the spleen.

The gallbladder, ducts and pancreas appeared unchanged; the aorta showed marked arteriosclerotic changes, chiefly in the abdominal portion; the thyroid was normal. We were not permitted to examine the bone marrow, the brain or the spinal cord.

Microscopic Examination of the Organs Chiefly Involved.—The nodules of the spleen were formed by areas of necrosis, in which a few polymorphonuclears and chromatin detritus could be recognized. The tissue around the nodules was quite congested; the pulp cells showed marked phagocytic activity, red blood cells, chromatin débris and polymorphonuclears. A thin, fibrinous exudate was seen at times over the nodules, involving the capsule of the spleen, and this was quite typical.

In the liver there were numerous small and larger necrotic areas. The contour of the liver cells could be distinguished in the smaller areas, but in the larger lobules these cells were obscured by marked cellular infiltration, which in some lobules was plainly polymorphonuclear, while in others it was generally lymphocytic. When the nodules involved the capsules there was frequently a slight depression of the surface, which was covered by a thin, fibrinous, leukocytic exudate.

In the lungs, the nodules were readily seen to involve several alveoli, in which the contour could only be surmised by certain necrotic rests of the alveolar septums. The nodules bore considerable resemblance to small areas of caseation, but only a few polymorphonuclear leukocytes and a few connective tissue cells could still be recognized in the coagulated exudate and débris remaining from the broken down tissues.

The chief changes shown in the kidneys were those of cloudy swelling of the epithelial cells of the first tubuli contorti, with some desquamation and a few red blood cells. There was also some perivascular infiltration along the veins belonging to the system of the venae stellatae, and where seen these cells were lymphocytic.

Speaking generally, in all the organs studied there was a singular absence of Langhans' type giant cells. These have been described before in cases of human tularemia, but were not seen in our case presumably because of the relatively short time obtaining between infection and the death of the host. Here and there many small blood vessels and capillaries could always be identified; these showed a swelling and proliferation of their lining endothelial cells,[3] and this, no doubt is the characteristic obliterating, proliferative response that leads to the curious type of nodule with its progressive necrosis incidental to lack of blood supply.

As to the similarity of the nodule itself to miliary tuberculosis, this is more impressive microscopically than grossly.

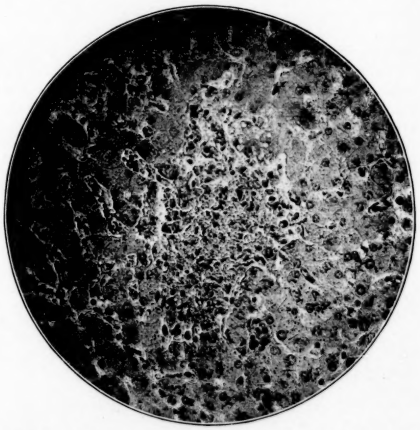

Fig. 3.—Appearance of liver under high power magnification, showing necrotic area in center.

The nodule grows much more rapidly than that of tuberculosis, and attains a much greater size. It tends to depress the surface of the organ affected rather than to elevate slightly,

3. A very complete and interesting report from the Crile Clinic, Cleveland, relative to cutaneous lesions and the microscopic changes in the tissues is that of Netherton, E. W.: Tularemia with Reference to Its Cutaneous Manifestations, Arch. Dermat. & Syph. **16**: 170-184 (Aug.) 1927.

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and is somewhat irregular. The lesions should be viewed freshly to be appreciated. We are showing in the accompanying illustrations a few of the more striking lesions.

COMMENT AND SUMMARY

1. A man with a tularemic infection died within sixteen days after accidental inoculation with the disease. In this case no attempt was made to isolate the causative organism, *Bacterium tularense,* through animal inoculation.

2. We have not undertaken to summarize the literature on this striking and "strictly American disease," but a rapidly growing series of reports is readily accessible, discussing the epidemiology, the difficulties involved in making cultures of the organisms, and the dangers involved for laboratory workers, owing to the extreme danger of acquiring by contact "the typhoid form of the disease." [4]

Fig. 4.—Gross appearance of lung: the tularemic nodules have been retouched.

3. Since this disease has been reported in such widespread areas of our country, it must be frequently overlooked. Reports such as these may stimulate watchfulness and point the need of caution in handling rabbits and other animals commonly hunted,[5] as well as interest health and sanitary boards in the closer study of the various plagues which, according to popular impression, devastate wild life at apparently regular intervals.

4. Kavanaugh, C. N.: Tularemia—Report of Seven Cases, Kentucky M. J., July, 1927.
5. Merriman, L. L.: Tularemia: A Comparative Study of Four Cases Originating in Minnesota, Minnesota Med. **10:** 719 (Dec.) 1927.

Experience Versus Observation.—It is generally supposed that the greater the number of patients a doctor sees the greater his experience and his knowledge. That is only a half-truth, because a doctor may see hundreds of patients and be most meticulous in recording the symptoms during a passing phase of the disease, and yet be none the wiser regarding the prognostic significance of any one of them.—Ramsay, A. M.: *Brit. M. J.* **2:**1216 (Dec. 31) 1927.

VIRULENT INFECTIONS OF THE HAND AND FOREARM

TREATMENT BY PROPHYLACTIC CHEMICAL AND TRAUMATIC INFLAMMATION

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OMAHA

Virulent infections of the hand and forearm, particularly of the streptococcic type, are often followed by an extension upward during proper surgical and supportive treatment. The pathways of extension are through the lymphatics, veins, fascial planes, connective tissue spaces, tendon sheaths, skin and fat, with or without localized or nonlocalized suppuration.

The virulent bacterial invasions without true suppuration have, as a rule, been considered nonsurgical in the sense that incisions are more harmful than beneficial. In such invasions a serous infiltration is found, with a small percentage of leukocytes, a characteristic condition in certain streptococcic infections. When true suppuration almost immediately accompanies the invasion, or occurs later, incisions for drainage are very essential. Unfortunately, however, in too many instances the bacteria are well beyond and the operation merely follows the late results of the infection, too often failing to arrest the progress of the disease.

Three types of inflammation are recognized: (1) bacterial; (2) chemical, and (3) traumatic, the early reactions of each within the tissues being quite similar. Since the reaction of inflammation is protective, it may appear logical that if a nonbacterial inflammatory condition, produced by gauze, chemicals and surgical trauma, could precede a bacterial invasion, the former might limit the progress of the latter.

On this conception of traumatic and chemical inflammation, as prophylactic predecessors of a virulent bacterial invasion, I am reporting three examples in which I applied this principle, with, I think, most favorable results. Many infections starting in the hand progress upward along the flexor surface into the forearm. Comparatively rarely does one see bacterial invasions in the forearm in the early stages extend upward along the extensor surface, perhaps because the flexor tendons make a favorable gutter and the interosseus membrane tends to hold the invasion in the anterior portion.

REPORT OF CASES

CASE 1.—A negro section hand came under my care about two hours following stab wounds in the right upper extremity, which completely penetrated the fingers, hand and upper third of the forearm. The wounds through the forearm involved nearly all the soft structures and preceded those made in the hand. All were thoroughly irrigated with iodine solution and drained through and through with rubber tissue. Those in the upper third of the forearm required five rubber drains in various directions, owing to the extensive nature of the injury in this area.

Three days later a virulent short chain streptococcic infection became evident in the palm of the hand, and on the fourth day it had extended to the tissues on the anterior portion of the wrist joint. During the fifth day the hand, wrist and lower half of the forearm were greatly swollen, without signs of a purulent exudate and with the patient presenting a most septic appearance. During the sixth day the invasion had progressed upward to the previously wounded area, which still contained the through and through drains, but it did not extend beyond. At this point there was a striking contrast between the infected tissues below and the healthy tissues above. Several pockets of pus, near the wrist, were evacuated later by

incisions, and in three months from the time of the injury the patient had completely recovered, without any loss of function.

CASE 2.—A woman, aged 22, recently became infected from a manicure wound at the tip of the middle finger. In seventy-two hours the finger was swollen, hard, red and painful, with no areas indicating an incision for drainage. By the end of seven days this brawny, nonsuppurating infection had extended throughout the anterior surface of the hand, wrist and lower half of the forearm. The patient was extremely toxic and ill, and the loss of her arm, even her life, seemed uncertain

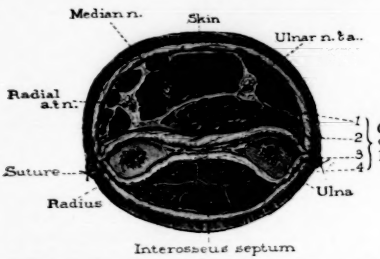

Fig. 1.—Proximal surface of a cross section through the middle part of the forearm. In addition to the areas containing the coffer-dam packs, the nerves, vessels and muscle bundles are loosened from their environment by blunt finger dissection, the reaction producing traumatic inflammation.

since the process appeared to proceed steadily upward. From a fairly extensive knowledge gained in the previous case, twelve years before, and applied several times successfully since, I separated the tissues in the upper fourth of the forearm, with the idea of inserting prophylactic gauze packs or drains. I found here, however, a serosanguineous, nonpurulent fluid between the muscle planes and inserted rubber tissue for drainage. Desiring a healthier area, I explored the arm midway between the elbow and the shoulder joints, which area I found to be normal. Here I placed gauze drains in various directions, anteriorly and posteriorly to the humerus, through all the lines of each cleavage between muscle bundles, bones and vessels and beneath the entire skin in this area. The infection, still without apparent localizing suppuration, ascended in a few days to the area of the previously produced prophylactic inflammation in the upper arm but did not advance beyond. The sharp demarcation between the acutely infected tissues below and the healthy tissues above was so striking that I felt convinced that the prophylactic inflammation had resulted in a sharp barrier to this most virulent infection.

CASE 3.—A section hand, aged 35, while attempting to catch a file hurled to him, caught the sharp end on the palmar surface of the hand between the third and the fourth fingers, receiving a wound penetrating about 2 inches. After seven days of treatment by a physician he resumed work, but on the following day noticed a marked swelling of the hand which became quite tender and painful. July 23, 1927, twelve days after the injury, he entered the University Hospital with a greatly swollen and painful hand that had a sinus about 2 inches deep, from which a thin seropurulent exudate could be expressed by gentle pressure.

The day after admission this sinus, about 3 inches in length, was opened, but no other infected pockets could be found. A culture taken from the deepest portion displayed later a hemolytic streptococcus. In seventy-two hours following the complete exposure of the sinus, the entire hand and the area over the flexor surface of the wrist joint showed definite signs of an advancing indurated streptococcic invasion, and there was a temperature of 105 F. at 4 p. m. A few hours later the soft tissues anterior to the wrist joint were explored and found surrounded by a serosanguineous (nonpurulent) exudate. This indicated, to me, the presence, at least near by, of the streptococcus. Starting 4 inches above this area I made two lateral incisions extending upward for about 3 inches. The deep structures were found to be normal and the muscle bundles were separated by blunt dissection from the bones, from the interosseus septum and from each other. The skin, on the flexor surface over this area, with the fat, was cut free from the fascia beneath and a gauze wick, the width of the incision, was passed between the fat and fascia, as well as through the space previously made between the muscles and the bones. Returning to the area over the wrist joint, just previously explored, I found several cubic centimeters of a purulent secretion directly over the pronator quadratus muscle, which came directly from around the deep structures of the palm of the hand.

The coffer-dam packs were left in forty-eight hours, during which time the infection in the hand and lower third of the forearm increased in severity. Several additional incisions were made through the hand and the base of the fingers, and for several days it appeared as if an amputation would be the only means of saving the man's life. Although the hand and the arm up to the coffer-dammed area appeared virulently infected and swollen, the tissues above remained perfectly healthy. The patient at present is making a satisfactory recovery, although there will be a considerable loss of function, owing to tissue destruction from the infection, drainage and scar-tissue reaction.

COMMENT

I have used this induced prophylactic inflammation in five selected cases of virulent suppurating and nonsuppurating infections during the past twelve years and in no instance have I seen the ascending infection extend beyond it. I have never placed these drains less than forty-eight hours before the ascending infection reached this area, feeling that it took at least that much time to bring about a chemical and traumatic inflammation in healthy tissues. Clinical judgment is necessary before this principle is applied, and it may be well argued that in the cases I have here reported recovery may have ensued without this prophylactic surgery. I am recommending this procedure only in those infections which progress in the presence of accepted treatment, and in which the loss of a limb or a life seems imminent. The sharp line of demarcation,

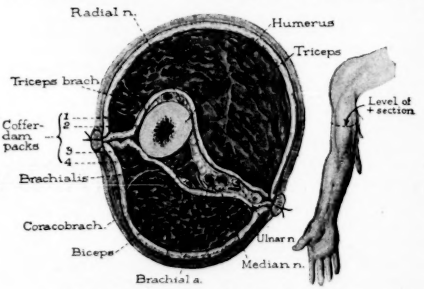

Fig. 2.—Cross section through middle part of arm.

in these five instances, between the virulently infected tissues below and the healthy tissues above could not, however, have been made by any other agent than the prophylactic inflammation.

TECHNIC

The point of election is generally from 4 to 6 or more inches above the apparent upper limit of the ascending infection. Incisions from 2 to 3 inches through the skin, fat and deep fascia are made on opposite sides of the arm. The index finger then separates the muscle bundles from one another and from the bone and inter-

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osseus septum. In the forearm this is generally carried out only in the flexor surface; in the upper arm, on both the flexor and the extensor surfaces. The fat is left attached to the skin as one layer and is separated from the deep fascia beneath from one incision to the other. Thin chemical gauze strips of desired width are then packed lightly in the various planes of cleavage. If signs of inflammation and suppuration are unexpectedly encountered, other prophylactic incisions should be made higher up, as was done in case 2. How long these prophylactic coffer-dam producing drains should be left in place will depend on the judgment of the surgeon; in my experience, from forty-eight to seventy-two hours has sufficed. As strict asepsis as possible must be maintained while these wounds are being made, which requires considerable care in the presence of sepsis so near by. In the future I shall hermetically seal in these gauze wicks by tightly suturing the skin in order to prevent a possible contamination before the chemical and traumatic prophylactic inflammation results.

1426 Medical Arts Building.

Clinical Notes, Suggestions, and New Instruments

ANOTHER CASE OF PEDUNCULATED LIPOMA OF THE ESOPHAGUS *

W. T. GARRETSON, M.D., F.R.C.S., AND GEORGE C. HARDIE, M.B. (TOR.)
DETROIT

In 1922, Vinson[1] presented what was apparently the first reported case of pedunculated lipoma of the esophagus. Since then we have been unable to find a report of another case. Therefore, the case here presented is the second on record.

REPORT OF CASE

T. H. M., a man, aged 59, came to the hospital, Feb. 14, 1927, complaining of difficulty in walking and entered the hospital for investigation. February 15, he was sent to the nose and throat department for routine nose and throat examination and Bárány caloric tests. No special abnormalities were noted either in history or in the physical examination. Toward the end of the caloric test, however, the patient vomited and in vomiting brought up a sausage-shaped soft tissue mass, from 1.5 to 2 cm. in diameter, which protruded from the mouth about 10 cm. It was covered with a smooth mucosa, beneath which were two or three fairly large blood vessels. The distal end was concave, giving the impression that the sleeve of mucosa had been drawn down past the true end of the growth. The proximal end disappeared down into the esophagus. Pinching did not cause pain, but traction caused a sensation of drawing in the throat at about the level of the cricoid cartilage.

Careful questioning revealed the following history:

One year before, he vomited and after considerable retching he brought up into his mouth a smooth rounded mass which he was able to grasp with his fingers. He was unable to pull the mass out, so he swallowed it again. His local physician made a careful examination of the throat, but nothing was found. As there were no symptoms, the occurrence was forgotten.

Though the condition had no bearing on the disease of the central nervous system, the patient desired that the growth be removed. This was done by one of us the same afternoon.

Under a local anesthetic, an esophagoscope was passed into the esophagus and the tumor was found to be attached just inside the upper end of the esophagus proper, a little toward the right on the posterior wall. Further examination down to the cardia did not reveal other abnormalities or similar growths.

A number 0 catgut ligature was placed round the pedicle of the growth and the growth removed by means of a tonsil snare. Unfortunately the snare wire cut the ligature, but as there was no bleeding it was not felt necessary to cauterize the base. The patient returned to his room in excellent condition.

For the remainder of that day and all the next day, all foods and fluids were withheld by mouth; instead, dextrose and saline solution was given by rectum. On the morning of the 18th, he was allowed a small quantity of sterile water by mouth and at noon was given a little boiled milk. On the 19th, a soft diet was permitted. Convalescence was uneventful. No discomfort or dysphagia followed the operation.

The growth was examined by Dr. F. J. Hartman, who diagnosed fibrolipoma and reported that the specimen consisted of a sausage-shaped, soft, tissue mass, 15 cm. in length and of an average diameter of 15 mm. It appeared to be covered by reddish purple mucous membrane. It showed at one end a narrow tissue bridge, 4 cm. in length, where it had been resected from the esophagus. The other end terminated with two pointed short extensions, between which a depression could be seen. The consistency was very soft and mucoid throughout.

Fig. 1.—Pedunculated fibrolipoma as it appeared immediately after being vomited up.

Microscopically, sections from the near tip showed the tumor covered by a thin layer of squamous epithelium. Beneath this there was sparsely nucleated, pink staining, fibrous stroma containing many large and smaller thick walled blood vessels, some of which had undergone endarteritis. Throughout the stroma, especially about the blood vessels, there was intense round and wandering cell infiltration. There was no fatty tissue in this section.

Sections taken near the base of the tumor showed it covered by squamous epithelium. Beneath this there was a layer of sparsely nucleated fibrous tissue with many blood spaces and an intense round and wandering cell infiltration. Deeper were large alveoli of fat cells with only a very delicate supporting stroma. Here and there throughout this tissue there were small lymph follicles and moderate round and wandering cell infiltration.

COMMENT

Benign tumors of the esophagus are comparatively rare. The following types are said to occur: polypi, lipomas, adenomas, leiomyomas and fibromyomas.[2] To this may be added rhabdomyomas and angiomas.[3] Most benign tumors of the esophagus are polypoid on account of the dragging action of peristalsis. The concave end of the tumor in our case also bears out this fact.

Polypi are hyperplastic areas in the mucosa and are therefor smooth and often multiple. This is the most common type of benign tumor of the esophagus.[4]

Papillomas are really papillary fibromas. They are usually single, irregular, nodular growths. They may be very rich in

* From the Department of Ophthalmology and Oto-Laryngology, Henry Ford Hospital.

1. Vinson, P. P.: Pedunculated Lipoma of Esophagus, J. A. M. A. **78**: 801-802 (March 18) 1922.

2. Kaufmann: Spezielle pathologische Anatomie **1**: 501, 1922. Aschoff: Pathologische Anatomie, ed. 6, **11**: 701, 1923.

3. MacFarland: Surgical Pathology, 1923, p. 564.

4. Kaufmann (footnote 2). Vinson, P. P.: Polypi of the Esophagus, J. A. M. A. **88**: 923 (March 19) 1927.

blood vessels and therefore tend to bleed readily. An interesting case was reported by Thomas Farr.[5] The growth apparently produces symptoms during life but was not diagnosed correctly until autopsy.

Lipomas occur frequently, but are found chiefly at autopsy as small, rounded elevations in the submucosa.[5] It is possible for these tumors to become pedunculated, as in ours and in Vinson's case. The other types of benign tumor are extremely rare.

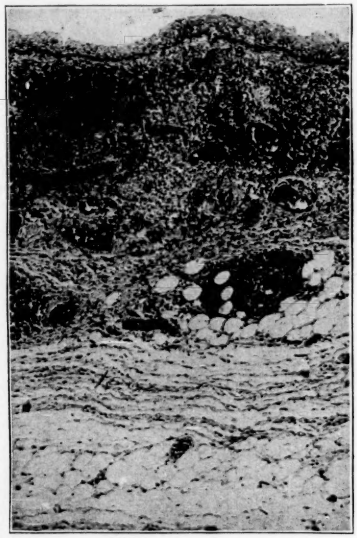

Fig. 2.—Section from proximal end of growth showing epithelial covering. Beneath this is fibrous tissue infiltrated by round and wandering cells. Only in the deeper layers are to be seen the groups of fat cells.

The method of removal deserves some comment. The external route is more difficult. It takes longer. There is a great danger of mediastinal infection and the convalescence is longer. The advantages are that the growth can be more carefully excised and one has absolute control of hemorrhages. The oral route has the advantage in that by our method only a short time is required. There is little or no danger of mediastinal infection; the convalescence is shorter, three days in our case as compared to fourteen in Vinson's case.

Should bleeding occur, the raw area could be cauterized and, failing in this to control hemorrhage, operation by the external approach could be done without any additional risk, as if it had been our first choice.

5. Farr, Thomas: Benign Tumors of the Esophagus, Klin. Wchnschr. **2**: 2348 (Dec. 24) 1923.

Value of Serotherapy.—The public is coming to believe that for every disease which has affected mankind in the past, there is a serum or antitoxin. Now we know that some of these remedies are very valuable, both as preventive and curative agents. We also know that many of the new serums which are being placed on the market are not only useless, but very expensive. During the next few years many new serums and vaccines will be advocated by their manufacturers. We should inform ourselves as early as possible as to the value of each, that we may intelligently advise those dependent on us as to their use.—Emerson, G. S.: *New England J. Med.* **198**:90 (March 1) 1928.

ROENTGEN-RAY OBSERVATIONS IN ACUTE PERINEPHRITIC ABSCESS

PHILIP J. LIPSETT, M.D., NEW YORK

Adjunct Assistant Attending Gynecologist, Harlem Hospital; Adjunct Attending Surgeon, Jewish Memorial Hospital; Adjunct Assistant Attending Surgeon, Sydenham Hospital

The diagnosis of acute perinephritic abscess, while comparatively simple, has at times baffled the keenest clinicians. Whether this condition is primary or secondary to a focus in the kidney is beyond the scope of this communication. In either case (acute perinephritic abscess or metastatic pyogenic infection of the kidney proper), the onset is usually sudden and is ushered in by a chilly sensation or even by a severe chill. The temperature is high (from 103 to 104 F.) from the very inception of the disease. The clinical picture is that of a severe toxemia plus the local signs, such as localized pain in the costovertebral angle of the side involved. This pain is of utmost diagnostic significance particularly when it is intensified on pressure. If in addition to these signs there is a history of a recent superficial pyogenic infection, evidence of which may still be present, a diagnosis of acute perinephritic abscess or of a metastatic kidney infection may safely be made.

Closer observation will often reveal that a patient with a perinephritic abscess will frequently assume a characteristic posture not generally found in cases in which the infective process is confined to the substance of the kidney proper. The patient with the former condition will favor the side involved by arching the lumbar spine laterally with the convexity away from the lesion. In addition, there is also present a definite rigidity of the psoas muscle and a slight flexion of the thigh on the affected side. This posture is so marked at times that, in ill defined cases, hip disease or even lesions of the lumbar vertebrae are suspected.

Frequently, the toxic phenomena predominate, and the salient features of the perinephritic abscess are absent. It is in these cases that the clinician is baffled, and it is in such cases that the characteristic roentgen-ray sign about to be described may help to establish the correct diagnosis.

A study of the roentgenograms of perinephritic abscesses disclosed certain conditions which were fairly uniform; viz., a definite lateral curvature of the lumbar spine with the concavity toward the affected side, and a clouding and almost complete disappearance of the angle formed by the shadows of the inner border and lower pole of the kidney and the lateral margin of the psoas muscle, as shown in the accompanying illustration.

Diagrammatic tracing from a roentgenogram showing the curving of the lumbar spine toward the left; the lesion is on the right. The angle formed by the lower pole of the kidney and the lateral border of the psoas muscle (*A*) is distinct on the left side; the right side shows a faint outline of this angle. In this case the diagnosis was acute perinephritic abscess on the right side.

Feb. 11, 1926, I reported a case of acute perinephritic abscess before the East Side Clinical Society, and called attention at that time to these typical roentgen-ray observations. At the meeting of the genito-urinary section of the New York Academy of Medicine, Dec. 21, 1927, Dr. Edwin Beer presented a number of plates of perinephritic abscesses in which these roentgen-ray signs were confirmed. He was kind enough to give me credit for having first made this original observation, stating that his search of the literature failed to disclose any previous description of these roentgenographic observations.

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The underlying pathologic process readily offers an explanation for the curvature of the spine and for the obliteration of the psoas-kidney angle. The abscess and the surrounding tissue infiltration cause the latter to disappear on the roentgenogram, while the former is caused by the attempt on the part of the patient to relax the tension on the inflamed focus by arching the spine away from the lesion.

This roentgenologic sign is offered in the hope that it may serve as an additional aid in the diagnosis of acute perinephritic abscess, and that it may help to differentiate this condition from an acute infection of the kidney proper.

302 West Eighty-Sixth Street.

ROENTGENOGRAPHIC EVIDENCE OF PERINEPHRITIC ABSCESS

EDWIN BEER, M.D., NEW YORK

Although the majority of perinephritic abscesses are easily recognized, there is a large group of cases in which perinephritic abscess is present and in which the diagnosis is very difficult. Whether all of these abscesses originate in the kidney parenchyma or not, the urinary observations are usually of so little value that they do not help in the diagnosis. For many years, just as W. F. Braasch has done, I have tried to make use of urine cultures to determine the presence of such an infection in and about the kidney; but although a certain percentage of the cultures have yielded *Staphylococcus aureus*, it was too small a percentage to be of real clinical import.

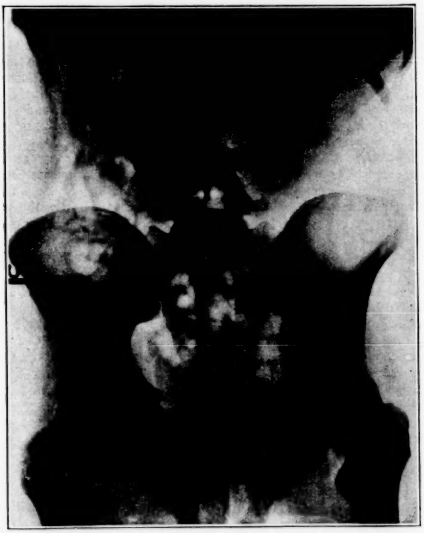

Fig. 1.—Posterior view, man, aged 25; right perinephritic abscess with obscuration of right psoas muscle and curvature of spine, with convexity away from abscess; approximation of iliac crest and last ribs on side of disease.

In these obscure cases, not infrequently diagnosed as typhoid, influenza, pulmonary tuberculosis, endocarditis and the like, it would be of great value if additional physical evidence of the presence of a perinephritic involvement could be obtained by some of our laboratory methods. In going over a series of roentgen-ray films, it has seemed to me that there are certain roentgenologic observations which may help to confirm the diagnosis when suspicion of a perinephritic inflammation has been aroused, and when the local signs are not absolutely diagnostic. In children this aid would be particularly valuable.

In studying the flat plates or films of patients suffering from perinephritic abscess, I have observed two signs which, when associated, may prove of diagnostic value. As far as my search of the literature is concerned, as yet no description

Fig. 2.—Posterior view, boy, aged 11 years: left perinephritic abscess with obscuration of left psoas muscle and curvature of spine, with convexity away from abscess; approximation of iliac crest and last ribs on side of disease.

of these two roentgen-ray features of perinephritic abscess has been encountered, though one of them, the obscuration of the lateral edge of the psoas muscle, I recall discussing several years ago at the East Side Medical Society, and Ockerblad has also mentioned this in his discussion. A recent study of a number of flat plates of these cases has shown first that the spine is curved away from the involved side, perhaps because of contraction of the spinal muscles near the suppurating focus. This arching of the spine toward the opposite side, as can readily be seen in the demonstrated films of a large number of cases, is interesting and significant. As the inflammatory condition disappears, the spine becomes straight again.

The second roentgenographic evidence of perinephritic abscess, obscuration of the outer margin of the psoas muscle, is apparently less regularly present, although in many cases it also is very definite. The mass produced by the abscess and perinephritic swelling obscures the outer margin of the psoas muscle, and as a result there is a striking contrast between the edges of the two psoas muscles: on one side the edge being clear-cut and on the other no edge (or a very faint one) being visible. Naturally, any large kidney growth or large lower pole kidney tumor, or retroperitoneal tumor, as well as a psoas abscess, may do the same thing. Although such kidney tumors or hydronephroses may overlie the psoas edge and obscure it, still unless there is an infection or a blockade with infection of such a kidney, apparently one fails to get a reflex contraction of the muscles which leads to the arching of the spine away from the involved side. In view

of the fact that the latter cases are liable to give urinary observations of a pathologic character on the side involved, this also will exclude the presence of a perinephritic abscess which, as I have said before, is usually associated with no marked change in the urinary secretion.

45 East Eighty-Fifth Street.

CONSTRUCTION OF AN ARTIFICIAL PATELLA

F. J. LENNON, M.D., BUFFALO

Ankylosis of a joint, particularly of the shoulder, elbow, hip and knee, so seriously handicaps the manual worker that every effort should be made to remedy this defect. The employer today is reluctant to hire a man who is physically disabled, and hence surgeons have been called on to exercise their ingenuity in devising means to increase the range of motion and to limit the pain in diseased joints.

Gallie and LeMesurier[1] have demonstrated the many ways in which fascia lata may be used in plastic and reconstruction surgery. They chose this tissue because of its accessibility and its resistance under strain and particularly because it was not absorbed. Their notable experiments on the repair of hernias and of large defects in the abdominal wall following gunshot and shrapnel wounds were convincing evidence of the value of this procedure. Since that time, this method has been used by many surgeons and is now a routine procedure for the repair of old, large and particularly recurrent hernias.

The repair of old fractures of the patella, particularly when there is a wide separation of the fragments or when the bone has become thinned out, has been very unsatisfactory in the past, and the results obtained have hardly compensated the patient for the pain and disability which he suffered.

REPORT OF CASE

Jan. 6, 1927, a patient (M. W.) was referred to me who gave a history of having sustained a very severe fracture of the middle of the femur six months previously. This fracture had been repaired by the open method and the application of a plaster cast, which extended from the pelvis down to the toes. The cast was not removed for three months, following which it was found that the knee was absolutely stiff and resisted all movements. Under deep anesthesia, an attempt was made to break up the adhesions and, in so doing, the patella was fractured and the ends of this bone retracted so that they were separated approximately 2 inches. I felt, after

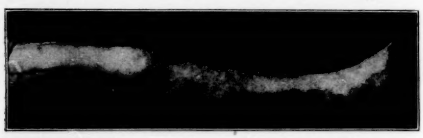

Fig. 1.—Almost normal extension after construction of artificial patella.

examination, that the two ends could not be brought in close apposition and that merely suturing the fractured ends with kangaroo or wire would be a futile procedure, for it was reasoned that if function was to be restored early, voluntary motion, particularly extension, would be necessary.

A suture, to be of any value for this operation, must have the following qualities:

1. It must be nonabsorbable.
2. It must not act in the tissues as a foreign body.
3. It must not stretch.
4. It must be resistant to extraordinary strain.

The only material known that has all these qualities is fascia lata. Numerous experiments have proved conclusively that this tissue is absolutely dependable and, further, that the longer it is contained within the tissues, the more resistant it becomes and the greater the amount of strain that can be put on it. It was obvious that absolutely no reliance could be placed on the remaining portions of the patella. In fact, I felt that the less bone I had to deal with, the better the chance of obtaining a successful functional result. Hence, in operating, which I did, February 7, exposing the knee joint by an anterior median incision, I cut away as much of the bone and below as was possible, so that practically none of it remained beyond the insertion of the tendons.

An incision was then made on the outer aspect of the opposite thigh, and four strips of fascia lata, approximately one-fourth inch in width and over 6 inches long, were removed. These strips were laced about the upper and lower fragments of the patella, just enough tension being made to bring them as closely together as possible without stretching them unduly. The end of each strip of fascia was left loose,

Fig. 2.—Flexion obtainable with artificial patella.

and in the center, between the ends of the bony fragments, a knob circular in outline and resembling the normal contour of a patella was made by sewing each strip through the other strip. The knee was then put up in a posterior splint in extension for one week, and the skin closed, at the end of which time the cast was removed and active voluntary motions were begun.

For the following three months, physical therapy and massage were used almost daily. As soon as possible, the patient was given crutches and urged to walk, and he was also instructed to bend the knee as far as possible without causing undue pain. I was very confident from past experience that this fascia would not give and I felt that active voluntary movements would restore function much sooner than passive motion.

The value of this fascia as a suture material was put to a severe test, August 9, when the patient, while drunk, fell on the injured knee and ripped open the wound. He was unable to obtain medical aid until the following day, when he came into my office and I found the wound wide open and contaminated. Fortunately, no infection resulted. I had an opportunity at this time to examine carefully the tissues under the skin, and with the skin edges retracted observed the reconstructed patella during active voluntary motions. No rupture or stretching of the fascia was evident. No attempt was made to immobilize the limb after this accident, and motions were urged to the limit. He made an uninterrupted recovery, and at the present time he is walking without the aid of any support. He is able to extend the leg voluntarily to within 10 per cent of the normal limit, as is illustrated in figure 1. Flexion is limited to approximately 40 per cent, as shown in figure 2. He has excellent muscle control, is able to bend both knees without discomfort or pain, and can ascend and descend stairs without pain or effort.

It should be expected that even greater improvement will result in the future. I am very hopeful that eventually there will not be any permanent impairment of function.

CONCLUSIONS

This case demonstrates graphically that fascia lata is the ideal suture material in plastic operations, such as the repair of old and very large hernias and fractured patellas and the

1. Gallie, W. E., and LeMesurier, A. B.: The Use of Free Transplants of Fascia as Living Sutures in the Treatment of Hernia, Arch. Surg. 9: 516 (Nov.) 1924.

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bridging of large defects in such regions as the abdominal wall.

No suture material besides fascia lata contains all four of the elements necessary for a successful result. It must, of course, be used as an autogenous graft, and under these circumstances it will not die.

The necessity for early voluntary motion in these cases should be insisted on, and one week after operation voluntary motion should be started. No fear need be entertained of injuring or pulling out the sutures. While the baking and massage are valuable adjuncts, voluntary activity is the essential factor, and the patient must be instructed to move the parts to the limit of pain.

It will be observed from the accompanying illustrations that the most important function at the knee, namely, extension, has been restored almost to normal and flexion has been restored to a degree that permits sitting and bending. There is no interference with weight bearing and the patient is now able to return to work.

468 Delaware Avenue.

Council on Pharmacy and Chemistry

ANNUAL MEETING OF THE COUNCIL ON PHARMACY AND CHEMISTRY

The Council on Pharmacy and Chemistry of the American Medical Association held its annual meeting at the headquarters building, 535 North Dearborn Street, Chicago, Friday and Saturday, April 6 and 7. The following members were present:

Reid Hunt, chairman of the Council, professor of pharmacology, Medical School of Harvard University.

Torald Sollmann, vice chairman of the Council, professor of pharmacology and materia medica, Western Reserve University School of Medicine.

W. A. Puckner, secretary of the Council.

A. J. Carlson, professor of physiology, University of Chicago.

C. W. Edmunds, professor of materia medica and therapeutics, University of Michigan Medical School.

Morris Fishbein, editor of THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Ernest E. Irons, clinical professor of medicine, Rush Medical College.

Lafayette B. Mendel, professor of physiologic chemistry, Yale University.

McKim Marriott, professor of pediatrics and dean, Washington University School of Medicine.

F. G. Novy, professor of bacteriology, University of Michigan Medical School.

L. G. Rowntree, professor of medicine, Mayo Foundation.

The Council discussed at length various problems of a general nature that have come up in the routine of its work of determining the acceptability or unacceptability of medicinal preparations for inclusion in New and Nonofficial Remedies. In addition, questions concerning specific products were discussed. Among the subjects considered, those of special interest to the medical profession were:

Hypodermic Digitalis Preparations.—The Council discussed the desirability of making available a nonproprietary preparation of digitalis for hypodermic use and voted to cooperate with the Committee of Pharmacopeial Revision in studying the activity of any such preparations as may be offered for the Pharmacopeia.

Digestive Enzymes.—In discussion it was brought out that no new evidence for the value of digestive enzyme preparations has appeared since the decision of the Council to exclude those proposed for therapeutic use from New and Nonofficial Remedies with the close of 1929. The Council voted to confirm its action and, unless new evidence develops, to exclude all digestive enzyme preparations from New and Nonofficial Remedies with the close of 1929. The manufacturers of digestive enzyme preparations now in New and Nonofficial Remedies will be informed of this decision and given opportunity to present any evidence they may have.

Desiccated Pituitary Preparations.—The discussion brought out the fact that while recent work has shown much that is confirmatory of the value of pituitary preparations for parenteral use, no such satisfactory evidence has developed for the use of the desiccated product by mouth. The Council decided to omit all desiccated pituitary preparations from New and Nonofficial Remedies with the close of the longest period for which any such preparation now stands accepted, unless before that time new evidence for their value becomes available.

Mixtures of Drugs.—The Council discussed the available evidence for the value and rationality of a mixture of a barbital compound, marketed as such and found acceptable for New and Nonofficial Remedies, with an analgesic such as amidopyrine, provided such a mixture is marketed under a name descriptive of its composition and the claims made for it are supported by acceptable evidence.

Distribution of New and Nonofficial Remedies.—The Council voted to recommend to the Board of Trustees that funds be made available which will permit resumption of the distribution of New and Nonofficial Remedies each year to one class of students in the medical schools.

Cooperation of Medical Journals.—It was brought to the attention of the Council that a state journal which asserts that it follows the Council in the acceptance of advertising has been carrying advertisements of articles not accepted by the Council. It was decided that the matter be brought to the attention of the editor of this journal. The Council also decided to ask the General Manager of the American Medical Association to mark distinctively in the American Medical Directory those journals which will promise to limit their advertising of proprietary medicines to those accepted for inclusion in New and Nonofficial Remedies.

Food Preparations.—The Council discussed the question of considering all food preparations advertised in publications of the American Medical Association. It was proposed that the Council offer its cooperation with a view to examining all food preparations (except natural foods in their natural state) proposed for advertising in these publications.

Importation of "Narcotic" Drugs.—The Council considered the question of securing legislation which shall permit the importation of non-narcotic drugs now barred by the Narcotic Drug Import and Export Act, and which shall permit the importation of narcotic derivatives to be used for bona fide scientific investigation.

NEW AND NONOFFICIAL REMEDIES

THE FOLLOWING ADDITIONAL ARTICLES HAVE BEEN ACCEPTED AS CONFORMING TO THE RULES OF THE COUNCIL ON PHARMACY AND CHEMISTRY OF THE AMERICAN MEDICAL ASSOCIATION FOR ADMISSION TO NEW AND NONOFFICIAL REMEDIES. A COPY OF THE RULES ON WHICH THE COUNCIL BASES ITS ACTION WILL BE SENT ON APPLICATION.

W. A. PUCKNER, SECRETARY.

EPHEDRINE (See New and Nonofficial Remedies, 1928, p. 174).

Ephedrine-Swan-Myers.—A brand of ephedrine-N. N. R. Manufactured by Swan-Myers Company, Indianapolis. No U. S. patent or trademark.

Ephedrine Inhalant-Swan-Myers: A 1 per cent solution of ephedrine-Swan-Myers in light liquid petrolatum tinted pink and perfumed with oil of rose. No U. S. patent or trademark.

Science and Religion.—The domains of science and of religion are essentially different. Science is reason organized and systematically applied. Religion is a reasoned and not unreasonable abdication of reason with regard to problems which are not amenable to scientific treatment. There can be no conflict between science and religion, except when they trespass on each other, as, for example, when theologians would extend the mental surrender to questions which are amenable to scientific treatment.—Sarton, George: Introduction to the History of Science.

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SATURDAY, APRIL 28, 1928

ACIDOSIS, ALKALOSIS, AND WATER BALANCE

The pendulum of choice in therapeutic procedures nowadays swings quite as much with the scientific leanings of the times as with the consensus of empiric impressions that formerly so largely directed medical practice. An illustration of this is seen in the management of the states that are attended with edema or other manifestations of a disordered distribution of water in the body. In former years the mere mention of edema turned one's thoughts to the upset of renal function; for the kidneys are preeminently organs devoted to the elimination of water. Presently, however, the possible rôle of the tissues as potential depots of water began to be emphasized, and they were looked on not merely as indifferent holders of water but as active agents that somehow could bind or release water under appropriate conditions. The decisive factor in determining retention versus release of the water of the tissues appeared to be the reaction of the latter. The kidneys, on this basis, were regarded for the most part as merely responsive to the amount of "free" water available for excretion.

Knowledge of the real scientific basis for the movement of water and the water balance of the organism has far more than academic interest. The institution of diuresis is one of the problems continually confronting the physician; and it is of importance for him to know whither to direct his therapeutic attacks. It is a demonstrable fact that diuresis can be brought about by suitably selected alkalis; while, on the other hand, acid substances have been employed with excellent therapeutic results in certain types of edema. In a recent review, E. J. Stieglitz [1] of Chicago has selected the following salient phenomena out of "the chaos of fact and theory": First, water metabolism, as exemplified by normal balance, edema or dehydration, is not solely an evidence of altered renal function as regards the excretion of the water, but is greatly influenced by physiologic and chemical conditions of the tissues as a whole. Second, the acid-base balance of the body is of major importance in the control of a normal equilibrium. Third, the kidney, through its selective secretion of either an acid or an alkaline urine, and through its synthesis of ammonia, is an essential factor in the maintenance of such equilibrium. Therefore, Stieglitz adds, one again returns to the kidneys for an adequate explanation of the paradoxical response in diuresis, sometimes with acid and sometimes with alkali. Renal functions are multiple. In thinking of edema and renal function one tends, he concludes, to emphasize unduly the function of water elimination, ignoring the renal activity in controlling the reaction of the tissue fluids.

In earlier studies Stieglitz [2] indicated the probable mechanism of renal secretion in connection with the control of urinary reaction. It was shown that in the normal animal the cellular reaction of the secreting tissue, namely, the cells of the convoluted tubules and the loops of Henle, is invariably opposite to that of the urine. If the urine is acid, the cells are distinctly alkaline in reaction, whereas with an alkaline urine an acid reaction exists in the living cells. Any increase in the alkalinity of the urine is accompanied by an increased cellular acidity. It was concluded that the reaction of the urine is determined by secretion of an excess either of acid or of alkali by these cells, with the probable retention within the cells of either the cations or the anions, resulting in the observed reversed reaction. Alterations in the reaction of the urine thus may have functional physiologic significance. Nephritis may prevent the adjustments of cellular reaction already described; or undue demands on the renal structures, such as excessive administration of alkalis represents, may injure the previously normal kidney cells by increasing renal cellular acidity. Fear of acidosis has been widely disseminated. On the other hand, according to Stieglitz,[1] an alkalosis, as may be produced by long continued or excessive administration of alkalis, causes distinct renal irritation and occasionally a true nephrosis. Furthermore, renal injury may result in impairment in the function of neutrality control and thereby affect the tissues as a whole.

The fact seems to be that there is little choice between severe acidosis and alkalosis. In the body as a whole, Koehler [3] believes that the ill effects of the two conditions are produced through the common channel of depression of tissue oxidation. According to him the symptomatic distress during acidosis or alkalosis is similar; namely, lassitude, nausea and later vomiting, anorexia, headaches, weakness, listlessness, muscle aches, and drowsiness. A case of renal involvement was noted both in acidosis and in alkalosis. Opposite effects apparently are obtained in regard to weight and

1. Stieglitz, E. J.: Alkalis and Renal Injury, Arch. Int. Med. **41**: 10 (Jan.) 1928.

2. Stieglitz, E. J.: Histologic Hydrogen Ion Studies of Kidney, Arch. Int. Med. **33**: 483 (April) 1924.

3. Koehler, A. E.: The Effect of Acid and Base Ingestion on the Acid-Base Balance, J. Biol. Chem. **72**: 99 (March) 1927.

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hydration; during acidosis there is decrease in weight with signs of dehydration, while during alkalosis there is evidence of hydration with increase in weight. Incidentally, it should be noted that the phenomenon of alkalosis may occur without alkali therapy in cases of obstructing ulcers and continuous secretion of acid which is lost by vomiting. Normally, the blood of the portal vein has a higher alkali reserve than the arterial blood, probably through the depletion of acid by the gastric mucosa. This is similar to the difference between the blood entering and that leaving the kidneys, the latter having a higher carbon dioxide combining power than the former.

Any deviation from normal physiologic, physical or chemical conditions, if the deviation is not so excessive as to be destructive, Stieglitz points out, is a stimulant for activity on the part of the cells to return toward the normal environment. The significant fact is that either procedure, administration of acids or of alkalis, causes a deviation from the preexisting state and therefore acts as a renal stimulant. The result of renal stimulation is diuresis. Injured cells, already hyperirritable, are more readily influenced. In nephritis the acid renal cells are made more acid by the administration of alkalis, and it is suggested that this added insult is in part responsible for the clinical diuresis so obtained. If the original injury is severe, the additional insult, instead of being stimulating, may be destructive or injurious, with acute exacerbation of the nephritis or toxic edema, as is so often the case. On the other hand, treatment with acid substances in nephritis tends more strongly to acidify the urine and diminish the intracellular acidity, bringing the cells closer to their normal state. Such is Stieglitz's tentative explanation of the physiologic paradox of diuresis as the result of either acidification or alkalization therapy.

SOME FEATURES OF INTESTINAL OBSTRUCTION

Intestinal obstruction is a dreaded condition in alimentary disorders, not because the immediate or primary cause of the obstruction cannot usually be removed or remedied by surgical intervention, but rather because other difficulties of an as yet obscure nature render the value of all but early operative correction problematic. Hence a recent writer [1] dogmatically asserts that the hope of cure by surgery diminishes with each hour that such treatment is withheld. If acute obstruction goes untreated, the patient dies in from a few hours to ten days.

To account for this unexpected sequence to surgical repair of the bowel it is commonly assumed that death in acute intestinal obstruction is due to the absorption of some toxic element from the bowel above the point of obstruction. From a variety of experimental data a reviewer [2] concludes that the hypothetic substance responsible for the toxemia has its origin in protein decomposition in the obstructed bowel. He says that, even after obstruction to the continuity of the bowel has been established, a definite interval elapses before the fluid shows definite evidence of toxicity. It is usually from ten to twenty hours after the break in the continuity of the intestinal canal has occurred before much fluid accumulates above the obstruction, and thirty-six hours before the fluid shows marked evidence of toxicity. The intervention of bacteria appears to be necessary in the production of the noxious agent, though Whipple and his co-workers [3] believed that the absorbed toxin in intestinal obstruction has its origin in the mucosa of the bowel above the obstruction rather than in the content of the bowel.

It is venturesome to hazard a new opinion in connection with this confusing and much debated subject. Two recent investigations, however, deserve notice at this time. Wangensteen and Chunn [4] have made comparisons, in the department of surgery at the University of Minnesota, between the toxicity of the normal intestinal contents and the contents of the bowel in animals with intestinal obstruction. Comparisons were made of the toxicity of the intestinal contents above and below the point of obstruction, in experimental animals. The surprising conclusion is reached that all intestinal contents are toxic on injection. The intestinal contents of the normal dog and rabbit elicit the same symptoms on injection as do the contents of the obstructed bowel, and are just as toxic. In the dog with intestinal obstruction, the intestinal contents from below the point of obstruction appear even more toxic on injection than the fluid obtained from above the obstructing mechanism. At the Columbia University College of Physicians and Surgeons, Berg and Jobling [5] have produced partial obstructions representing chronic duodenal stenosis. The animals lived for long periods practically symptom free. There was a compensatory hypertrophy of the intestinal musculature above the obstruction, the inner circular layer contributing to the hypertrophy to a greater extent than the outer longitudinal. There was also hyperplasia of the mucosa. Although prolonged stasis and an increase in the bacterial content occurred in the duodenum, significant changes were not observed in other organs. In the face of all this, one cannot avoid the conviction that there must be some defense mechanism in connection with the alimentary tract. On its successful functioning the natural protection against ever present menaces

1. Holland, A. L., in Cecil's Textbook of Medicine, Philadelphia, W. B. Saunders Company, 1927.

2. Stone, H. B.: The Clinical Application of Experimental Studies in Intestinal Obstruction, Am. J. Surg. **1**: 282 (Nov.) 1926.

3. Whipple, G. B.; Stone, H. B., and Bernheim, B. M.: J. Exper. Med. **17**: 287, 307, 1913; **19**: 144, 166, 1914. Whipple, G. H.; Rodenbaugh, F. H., and Kilgore, A. R.: Ibid. **23**: 123 (Jan.) 1916. Whipple, G. H.; Cooke, J. V., and Stearns, T. J.: Ibid. **25**: 461 (March) 1917.

4. Wangensteen, O. H., and Chunn, S. S.: Studies in Intestinal Obstruction: I. A Comparison of the Toxicity of Normal and Obstructed Intestinal Content, Arch. Surg. **16**: 606 (Feb.) 1928.

5. Berg, B. N., and Jobling, J. W.: Experimental Chronic Duodenal Obstruction, Arch. Surg. **16**: 593 (Feb.) 1928.

in the intestine must depend. As Berg and Jobling point out, in their experiments the conditions in the duodenum were made most favorable for the multiplication of bacteria and the elaboration of toxins; nevertheless, systemic effects were not produced. Whether this was due to the ability of the liver to neutralize such toxic substances remains to be determined. The rôle of the mucosa in the defense mechanism is regarded as slight.

MUSCULAR WORK AND PROTEIN METABOLISM

The execution of motive work in the body is concerned with a tissue, the muscle, that is conspicuously rich in protein. Indeed, this component overshadows all other organic constituents of the contractile tissues in quantity. Nevertheless the consequent expectations that the muscle protein would play some conspicuous or even a minor part in the chemical transformation that results in muscular work have not been realized. True, animals have been kept over long periods on diets of meat under conditions in which it has seemed inevitable that, in ultimate analysis, protein must have contributed largely to yield the energy expended. As protein may yield more than half its weight of sugar through the metabolic exchanges, the mere feeding of meat would not forestall the possibility that the muscles themselves, under the conditions cited, were actually "energized" by non-nitrogenous derivatives of the ingested food. Indications that the muscles act preferably at the expense of non-nitrogenous substance have been accumulating for many years; today the dominating view is that carbohydrate is the immediate source of muscular energy.[1]

To ascertain whether there is destruction of tissue protein incident to muscle work, it is essential that there should be an adequate intake of energy during the working periods; otherwise an increase in urinary nitrogen—the measure of the breakdown—may mean a destruction of tissue protein merely to serve the unnecessary rôle of a source of energy. If evidence is not obtained of an increase in tissue destruction as the result of work, this in itself would seem to be a satisfactory indication that the energy intake was adequate. Observations of this sort are not lacking; and Lusk[2] has concluded without hesitation from them that the character of the protein metabolism is unchanged by muscular activity.

Doubts still remain in the minds of some investigators, however, since the Glasgow physiologist Cathcart[3] still believes that muscle activity does increase, if often only in small degree, the metabolism of protein, though this does not mean that protein is the source of muscular energy. The latest study is by Mitchell and Kruger[4] of the University of Illinois. They reason that if carbohydrates are the immediate source of muscular energy, as Hopkins, Hill and Meyerhof believe, it may be expected that muscular work will be more likely to increase the endogenous catabolism when performed on a dietary regimen characterized by a high percentage of fat, a low percentage of protein, and practically no absorbable carbohydrates, than when performed on a dietary containing abundant carbohydrates. All of their comparisons of nitrogenous metabolism during rest and vigorous activity, respectively, lead to the same conclusion. Considerable muscular effort, either static or motive, may be performed without appreciable increase in the excretion of total endogenous nitrogen or of creatinine in the urine, and hence presumably without appreciable increase in the catabolism of muscle tissue. Therefore, an increased catabolism of muscle tissue is not an inevitable consequence of increased muscular activity. This is true whether the diet is predominantly carbohydrate in character, or whether it is predominantly fat and contains only traces of carbohydrate. It is equally clear, Mitchell and Kruger add, that if the diet does not provide sufficient non-nitrogenous nutrients to supply the working muscle with energy, the muscle tissue itself may be sacrified for this purpose. Whether an accelerated breakdown of muscle tissue results from any other contingency during contraction cannot definitely be decided from available information.

1. Hill, A. V.: Muscular Activity, Baltimore, Williams & Wilkins Company, 1926.
2. Lusk, Graham: The Elements of the Science of Nutrition, ed. 3, Philadelphia, W. B. Saunders Company, 1917.
3. Cathcart, E. P.: Physiol. Rev. **5**: 225 (April) 1925.
4. Mitchell, H. H., and Kruger, J. G.: The Effect of Muscular Work on the Endogenous Catabolism of the Tissues, J. Biol. Chem. **76**: 55 (Jan.) 1928.

Current Comment

EARLY ACTION ON EMERGENCY OFFICERS' RETIREMENT LEGISLATION

The bill making eligible for retirement the emergency officers of the army, navy and marine corps who were disabled in line of duty during the World War, S. 777, has been passed by the Senate. It has been favorably reported by the House Committee on World War Veterans' Legislation and is now on the House calendar. A special rule in favor of the bill seems to insure early consideration. When introduced, this bill provided for the retirement of the emergency officers of the army alone. The Senate amended it, however, so as to permit the retirement of those emergency officers in the navy and the marine corps for whom retirement privileges had been granted in 1920[5] but who failed to take advantage of those privileges within the time limited by the legislation. THE JOURNAL[6] has already pointed out that approximately 20 per cent of the officers who will be benefited by the enactment of this legislation are physicians. They are men who, when they entered the army, were well above the draft age, averaging then between 40 and 45 years of age. They nevertheless

5. Act of June 4, 1920. 41 Stats. 834.
6. Retirement of Disabled Medical Officers of the World War, Current Comment, J. A. M. A. **90**: 466 (Feb. 11) 1928.

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gave up established practices and in many cases left families behind them and dedicated themselves wholly to the service of the country in the time of its need. Those who were disabled in that service have small chance of picking up the lost ends of practice and starting professional life over again. The pending bill cannot restore them to health or create for them the professional status they would now have if they had not gone to their country's aid. As a matter of justice, therefore, it should be enacted to mitigate their losses. In view of the rapidly approaching adjournment of Congress, it is important that the bill already passed by the Senate be promptly passed by the House, without amendment. Amendment of any kind will make necessary the return of the bill to the Senate for further consideration with the possibility of a deadlock and the failure of the legislation or at least delay in its enactment. For the sake of disabled fellow physicians, readers should promptly urge their Representatives to support this just and too long delayed legislation.

THEORIES CONCERNING THROMBO-ANGIITIS OBLITERANS

Theories direct thought in definite channels. There was little scientific foundation when Findlay proposed that mosquitoes transmit yellow fever, but the evidence was forthcoming within a few years. Theories serve to disprove as well as to prove the unknown. The factors that now seem concerned in the etiology of thrombo-angiitis obliterans are in the theoretical stage. Allen and Brown [1] point out that thrombo-angiitis obliterans, considered as occurring exclusively in men, has been reported by Buerger as present in three women. Meyer believed thrombo-angiitis obliterans due to excessive tobacco smoking, but three patients in the series of Allen and Brown did not smoke. Investigators generally have agreed that the disease occurs almost constantly between 25 and 50 years of age, but there was one patient in this series 17, and one 64 years of age; in the latter case, however, the diagnosis was not proved pathologically. Thrombo-angiitis obliterans has been said to occur predominantly in Russian Jews, but it has been found in Swedes, Chinese, Japanese, Koreans and Turks. About 50 per cent of Allen and Brown's patients were Austrians, Germans, Scots, Irish, English, Dutch, Greeks, Finns, Norwegians and native Americans. Occupation has no bearing on the cause, as 80 per cent of this series were active workers in various trades. A fact more significant than any of the preceding seems to be that only three in the whole group of 200 patients were free from some demonstrable foci of infection. The tonsils were infected in 80 per cent of the patients, and in more than half of those whose prostates were examined there was a prostatitis of clinical importance. Thus, for every etiologic factor advanced there are exceptions. Analyses such as these will sometimes clear up a situation. Apparently a theory that can be substantiated by experimental as well as clinical evidence is the need of the day for thrombo-angiitis obliterans.

1. Allen, E. V., and Brown, G. E.: Thrombo-Angiitis Obliterans: I. Etiology, Pathology, Symptoms, Diagnosis, Ann. Int. Med. **1**: 535 (Feb.) 1928.

THE MEDULLIADRENAL SECRETION

The substance of the suprarenal glands is divided both morphologically and functionally into cortical and medullary zones, having distinct embryologic origins. Although epinephrine, the distinctive hormone of the suprarenal medulla, can produce profound pharmacologic reactions, this portion of the gland is not essential to life. Ablation of the suprarenal glands leads to death, and the weight of the collected evidence favors the conclusion that the suprarenal cortex is an indispensable organ. There are indications, however, that though the medulla may not claim indispensability it can serve a useful function in various ways which have been discussed from time to time in THE JOURNAL. Additional evidence has been adduced by a group of investigators [1] at the Johns Hopkins Medical School. Their studies relate primarily to the effect of epinephrine on the carbohydrate metabolism, an influence in harmony with the known potency of the hormone in mobilizing sugar in the body and promoting calorigenic actions. The experimental results offer proof that in the absence of the normal epinephrine secretion the organism suffers a severe and persistent lowered ability to counteract the effects of minute amounts of insulin. It is further indicated that a highly potent secretion from the suprarenal medulla, tending toward depletion of the hepatic glycogen stores in the body while supplying sugar to the blood stream for use by the muscular and other tissues, takes place during insulin hypoglycemia, and that in the absence of this secretion the glycogen depots, although well furnished, have a much restricted availability to the interdependent parts of the organism. From this it follows that while life may apparently be normally sustained, as is well known, after suppression of medulliadrenal activity, under certain critical or emergency conditions a marked incompetence becomes evident. Perhaps medical thought has been too hasty in relegating the suprarenal medulla to a post of functional mediocrity in the body merely because it does not exhibit life-saving propensities.

NITRITES FOR SEASICKNESS

Recently THE JOURNAL made available a report on the treatment of seasickness with sodium nitrite. Briefly, Drs. J. Frank Pearcy and Daniel B. Hayden [2] announced that doses of from 0.2 to 0.3 Gm. (3 to 5 grains) of sodium nitrite every two hours relieved eight persons of such symptoms as ocular nystagmus, vertigo, ataxia and nausea within four hours. Moreover, the patients did not suffer any recurrence of the symptoms. Now further support for this method comes in a note by Dr. A. Sellheim of Leningrad to the *British Medical Journal*. He found that a single drop dose of a 1 per cent solution of glyceryl trinitrate (nitroglycerin)—which has the physiologic action of nitrites—kept one patient from turning sick. Another person who was sick was able to take dinner twenty minutes after swallowing 0.65 mg. daily. Other patients

1. Britton, S. W.; Geiling, E. M. K., and Calvery, H. O.: Medulliadrenal Secretion and Carbohydrate Metabolism, Am. J. Physiol. **84**: 141 (Feb.) 1928.

2. Pearcy, J. F., and Hayden, D. B.: Preliminary Report on Sodium Nitrite Therapy in Seasickness, J. A. M. A. **90**: 1193 (April 14) 1928.

were protected from seasickness or cured of it by one dose of two drops of a 0.5 per cent solution placed directly on the tongue. Here apparently is a method independently developed in two widely separated places. The clinical evidence seems perhaps less empiric than for many of the remedies for seasickness heretofore available.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION, PUBLIC HEALTH, ETC.)

ARKANSAS

State Medical Meeting at El Dorado.—The fifty-third annual session of the Arkansas Medical Society will be held at El Dorado, May 1-3, under the presidency of Dr. Henry Thibault, Scott. Dr. Jabez N. Jackson, Kansas City, Mo., President of the American Medical Association, will address the scientific session, Tuesday, and Dr. Henry Boswell, Jr., Sanatorium, Miss., the public session, Tuesday evening, on "Relation of the Medical Profession to the Laity." A memorial session will be held in the First Baptist Church, Wednesday morning, in memory of the twenty-one members who died since the last meeting. The scientific session following the memorial meeting will be addressed, among others, by Dr. Henry W. Walther, New Orleans, on "Conservative Treatment of Hydronephrosis"; the afternoon scientific session by Dr. Edward C. Mitchell, Memphis, Tenn., on "Diagnosis and Treatment of Paranasal Sinus Infection in Children." The session, Thursday morning, will be addressed by Dr. Samuel E. Thompson, Kerrville, Texas, on "Failure of the Physical or Roentgen-Ray Examinations to Reveal the Beginning of Tuberculosis and Their Failure to Show the Full Extent of the Pathology Verified by Autopsy." Well known Arkansas physicians will address the scientific session in addition to the guest speakers. The council will meet, Tuesday noon; the house of delegates, Tuesday morning and Thursday afternoon. In addition to the president's reception, Wednesday evening, there will be automobile trips to the oil fields, boxing at the athletic club, May 2, a golf tournament and meetings of civic clubs to which the members are invited. The women's auxiliary, which holds its fourth annual meeting simultaneously, will have charge of the *Hygeia* exhibit.

CALIFORNIA

Health at San Diego.—Telegraphic reports to the U. S. Department of Commerce from sixty-seven cities with a total population of about 30 million, for the week ending April 14, indicate that the highest mortality rate (22.3) was for San Diego, and that the rate for the group of cities as a whole was 14.7. The mortality rate for San Diego for the corresponding week last year was 17.2, and for the group of cities, 13.6. The annual mortality rate for sixty-six cities for the fifteen weeks of 1928 is 14.2, as against a rate of 13.8 for the corresponding weeks of last year.

Impostor Van Dickeson Sentenced.—Some months ago the body of a woman on whom an illegal operation had been performed was found in Oakland, in what was said to be the office of Charles Van Dickeson, alias Cole, alias Kohn, who, the police reported, was a chiropractor. For this crime, on March 24, Van Dickeson was sentenced to from five years to life in the penitentiary, and Edwin R. Cook, "bishop of the Church of Psychosophy," who assisted Van Dickeson, received a similar sentence. Van Dickeson is said to have served a term in prison in New York in 1923 on a charge of abduction, and to have fraudulently married a girl from New Rochelle, N. Y., in 1927. He stated, it is reported, that he held a diploma from the University of Buffalo which he purchased from an engraver and had filled out in the assumed name of Irwin A. Cole, which is the name of a reputable physician in Le Roy, N. Y. Coming to Oakland with the name of Cole, Van Dickeson started practicing. The bona fide Dr. Cole interviewed Van Dickeson at police headquarters in Buffalo and stated that he had never known him.

State Medical Meeting at Sacramento.—The fifty-seventh annual meeting of the California Medical Association will be held at Sacramento, April 30-May 3, under the presidency of Dr. Percy T. Phillips, Santa Cruz. *California and Western Medicine* calls attention to important business which will come before this meeting, including the proposed revision of the constitution and by-laws and a decision as to whether the state board of medical examiners shall continue in its present form or lose its identity and peculiar relation to the medical profession by being merged as one of about sixteen other California licensing boards into a Professional Standards Department of California. Governor Young will address the general meeting, Monday morning, and the president, Dr. Phillips, will speak on "Narcotics." The general meeting, Wednesday morning, will be addressed by Dr. Samuel A. K. Wilson, London, England, on "Sudden Cerebral Lesions"; Dr. Ray Lyman Wilbur, formerly President of the American Medical Association, on "Cost of a Medical Education," and by Dr. Richard H. Creel of the marine hospital, San Francisco. Dr. Harry Gideon Wells, Chicago, will address the general meeting, Thursday morning, on "Adipose Tissue," and Dr. Waltman Walters, Rochester, Minn., on "Acute Duodenal Fistula"; Dr. Wells will address a general meeting, Thursday evening, on "What the Layman Wants to Know About Cancer." Dr. Wilson will address the neuropsychiatry section on "Narcolepsy"; Dr. Gunther W. Nagel, Rochester, Minn., the general surgery section on "Duodenitis"; Dr. Paul A. O'Leary, Rochester, Minn., the dermatologic section, on "Four Years' Observation with Malaria Therapy in Patients with Neurosyphilis," and Dr. Charles S. Vivian, Phoenix, Ariz., the urologic section, on "Experience with the Colling's Electrotome." Many California physicians will present papers. Sacramento has much of interest to visitors and trips have been arranged to historic places. The program of entertainment includes the president's dinner and dance at the Hotel Senator, Tuesday evening; an interfraternity dinner and smoker at the Elks Club, Monday evening; a trout fishing trip, Tuesday (bring along your boots and tackle); a trap shoot, Tuesday, with prizes, on what is said to be one of the best grounds west of the Mississippi River (bring along your gun), and the annual golf tournament at the Del Paso Country Club, Tuesday morning, with trophies (bring your clubs). A trip has been planned for those interested to the Grass Valley gold quartz mines, some of which have been operated more than seventy years. The maximum time for any speaker, except the guest speakers, will be fifteen minutes. Four kinds of badges will be issued by the registration bureau, designating members, guests, delegates and councilors. The California Association of Medical Social Workers will meet at this time. The class of 1908 of Cooper Medical College will celebrate its anniversary with a dinner, Wednesday evening. A cordial invitation is extended to all persons engaged in medical work, and they, whether members or not, are requested to register at the information desk in the lobby of the auditorium, J Street, between Fifteenth and Sixteenth streets.

COLORADO

Osteopaths' Licenses Revoked.—The Colorado State Board of Medical Examiners, Denver, April 3, revoked the licenses of Edith Barber Halcomb and Ambrose L. Halcomb, osteopaths. It is reported that murder charges were filed against them following an illegal operation on a woman who later died. The charges subsequently were changed to malpractice.

DISTRICT OF COLUMBIA

Fort Leonard Wood.—The secretary of war has directed that the name Fort Leonard Wood be given to the military reservation, formerly known as Camp Meade, which is near the main highway between Baltimore and Washington, in memory of the late Major Gen. Leonard Wood. At the time of his death last summer, General Wood was governor general of the Philippine Islands. He had a long and distinguished career as a line officer in the army, although he was educated as a physician and for several years was a medical officer.

Personal.—Dr. and Mrs. Charles W. Richardson, Washington, will give a luncheon, May 2, at their home in honor of the president of the Congress of American Physicians and Surgeons and the presidents of the American Otological Society, the American Rhinological Association and the American Climatological and Clinical Association.——Lieut. Col. Charles F. Craig, medical corps, U. S. Army, lectured, March 30, on "Complement Fixation in Amebiasis" before the research club, department of medical zoology, Johns Hopkins University School of Hygiene and Public Health, Baltimore.

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ILLINOIS

Forty-Four Counties Escape Diphtheria — Cook Has Increase.—The state health commissioner, Dr. Isaac D. Rawlings, Springfield, reports that there was no diphtheria mortality in forty-four counties in Illinois in 1927. Two counties, Menard and Stark, have completed a five year period without a death from diphtheria. The state, as a whole, however, suffered a 77 per cent increase in diphtheria mortality last year, the number of deaths rising from 411 to 647. Cook County (Chicago), it was said, was responsible for the entire increase, 497 lives being lost as against 251 in 1926, or an increase of 98 per cent. Downstate, there was a 6 per cent drop in the diphtheria mortality. In the thirty-three northern counties of the state outside Cook County, the mortality rate was lowest. The more favorable conditions downstate are attributed to a relatively greater use of toxin-antitoxin, a 25 per cent decline in mortality being observed in the thirty-four counties south of Montgomery, where the largest percentage of children have been immunized.

Chicago

Dr. Jaffe Heads County Research Laboratory.—It has been announced that Dr. Richard H. Jaffe, professor of pathology and bacteriology, University of Illinois College of Medicine, has been named director of the new pathologic and research laboratory of the Cook County Hospital at a salary of $10,000 a year.

Dr. Geiger Goes to California. — Dr. Jacob C. Geiger, executive secretary of the Chicago Health Department under the administration of Dr. Herman N. Bundesen, has accepted a position as associate professor of epidemiology at the George Hooper Foundation for Medical Research and the University of California Medical School, San Francisco. Dr. Geiger has already taken up his new work.

National Hearing Week. — The American Federation of Organizations for the Hard of Hearing, Washington, D. C., has set aside May 1-5 as National Hearing Week, which the forty constituent bodies of the federation will observe throughout the country. The Chicago League for the Hard of Hearing announces that during this period there will be radio talks by otologists, special demonstrations in lip reading and a banquet at the Congress Hotel, May 3, to which all persons interested are invited; a cordial invitation is also extended to visit the community house, 206 East Superior Street. Reservations for the banquet can be made with the chairman of the committee, Miss Pauline A. Stein, telephone Delaware 5899.

Annual Meeting of Tuberculosis Societies. — The Illinois Trudeau Society will hold its annual meeting jointly with the Chicago Tuberculosis Society, May 7, at the Chicago Municipal Tuberculosis Sanitarium, where there will be a series of surgical and medical clinics by Drs. Carl A. Hedblom, Charles M. McKenna, Benjamin Goldberg, Henry C. Sweany, Samuel A. Levinson and Frank Smithies. The Chicago Tuberculosis Society will hold its forty-eighth annual meeting in the evening at the medical and dental building, 185 North Wabash Avenue, when it will entertain members of the Illinois Trudeau Society and of the state medical society, which will be in annual session at that time. Eight numbers have been arranged for the program, among which will be "Method of Making Tuberculin and Standardizing It Chemically," Florence B. Seibert, Ph.D., and "Spontaneous Tuberculin Reactions and Tuberculin Intoxication," Dr. Esmond R. Long, both of the University of Chicago; "Healed Tuberculous Primary Lesions of the Lung," Dr. Richard H. Jaffe, and "Fusospirochetal Pulmonary Infections," Dr. Isadore Pilot, both of the University of Illinois College of Medicine, and "Erythema Nodosum," by Elsa Lagergren of the Municipal Tuberculosis Sanitarium. There will be a dinner preceding the meeting at the club room on the twenty-third floor. The secretary is Dr. Samuel A. Levinson, 5601 North Crawford Avenue.

IOWA

New Health Officers.—Dr. Adolph J. Lieber has been appointed health officer of the city of Des Moines to succeed Dr. Harley L. Sayler, who has served the city for eighteen years.——Dr. Victor H. Hasek has been appointed health officer and city physician of Cedar Rapids.

Society News.—The fourth annual meeting of the Iowa Heart Association will be at the Roosevelt Hotel, Cedar Rapids, May 11. Dr. Henry Kennon Dunham, Cincinnati, will give an address on "Prevention of Heart Disease Is as Essential as the Prevention of Tuberculosis," and Dr. Horace M. Korns, Iowa City, "Early Diagnosis of Syphilitic Aortitis."

State Medical Meeting at Cedar Rapids. — The seventy-seventh annual session of the Iowa State Medical Society will be held at Cedar Rapids, May 9-11, under the presidency of Dr. Michael J. Kenefick, Algona, and with headquarters at the Hotel Roosevelt. Dr. Clarence W. Hopkins, Chicago, will give the address in surgery, Wednesday morning, on "Head Injuries; Differential Diagnosis and Treatment"; Dr. Paul S. Rhoads, Evanston, Ill., will speak on "Control of Scarlet Fever Epidemics with Special Reference to Immunization"; Dr. Henry Kennon Dunham, Cincinnati, will give the address in medicine on "Pathology of Pulmonary Tuberculosis Deduced from Physical Signs and the X-Ray Plate"; Dr. Arthur J. Bedell, Albany, N. Y., will speak, Thursday evening, on "Relation of Ophthalmoscopy to General Medicine," following which will be held the annual smoker; Dr. Samuel T. Orton, Columbus, Ohio, will discuss "Neurologic Studies of Some Education Deviates in Iowa Schools"; Dr. Wade H. Frost, U. S. Public Health Service, "Poliomyelitis with Special Reference to Epidemiology and Prevention"; other important papers will be presented by Iowa physicians. There will be a symposium on submucous resection of the nasal septum before the section on ophthalmology, otology and rhinolaryngology. The annual banquet will be Wednesday evening. Wives of members of the Lynn County Medical Society will hold a reception, Wednesday afternoon, for visiting ladies. There will be drives through the city and inspection tours, and a theater party, Thursday evening. The State Society of Iowa Medical Women will hold its thirty-first annual meeting, May 8. Among others, Dr. Mary M. Harper, Oak Park, Ill., will speak on "Medical Women in the Orient."

KANSAS

State Medical Meeting at Wichita.—The sixty-second annual meeting of the Kansas Medical Society will be held at Wichita, May 8-10, under the presidency of Dr. John A. Dillon, Larned. The general sessions will be held in the Lassen Hotel. The guest speakers will be Dr. John P. Lord, chairman of the department and professor of orthopedic surgery, University of Nebraska College of Medicine, Omaha; Dr. Otto H. Schwarz, associate professor of obstetrics, Washington University School of Medicine, St. Louis, "The Toxemias of Pregnancy"; Dr. Martin F. Engman, professor of clinical dermatology, Washington University School of Medicine, "Eczema and Zadig"; Dr. John Green, Jr., professor of ophthalmology, St. Louis University School of Medicine, "Conservation of Eyesight," and Dr. Waltman Walters, Mayo Clinic, Rochester, Minn. The many other papers will be presented by Kansans. The secretaries of all county societies will meet at a complimentary luncheon with the council of the Kansas Medical Society, May 8. The house of delegates will meet, Tuesday evening and Thursday morning. The local county medical society (Sedgwick) will give a banquet and dance, Wednesday evening. There will be a golf tournament, Monday afternoon, to which all members are invited; those who register for the tournament are also invited to a banquet Monday evening. The auxiliary of the state medical society will meet during the medical meeting and will be addressed, among others, by Dr. Dillon.

LOUISIANA

Personal.—Dr. Aldo Castellani recently completed a series of lectures on tropical medicine in Madrid, Spain, under the auspices of the Royal Academy of Madrid at the invitation of the queen of Spain.——Dr. James Phares O'Kelley has been chosen president of the New Orleans Country Club for 1928.

Winners at Golf.—Dr. Laurence R. DeBuys, New Orleans, won the silver loving cup at the annual medical golf tournament, held during the meeting of the state medical association in Baton Rouge, recently; Dr. Lionel F. Lorio, Baton Rouge, won the second prize (a set of clubs), but refused it because he was a member of the golf committee. The third prize, a golf bag, went to Dr. Lester J. Williams, Baton Rouge.

State Medical Election.—At the close of the forty-ninth annual meeting of the Louisiana State Medical Association, Baton Rouge, April 12, Dr. Leon J. Menville, New Orleans, became president of the association for the ensuing year; Dr. Frank T. Gouaux, Lockport, was made president-elect; Drs. Carl A. Weiss, Baton Rouge, Francis C. Bennett,

Monroe, and James Birney Guthrie, New Orleans, vice presidents; Paul T. Talbot, New Orleans, secretary-treasurer, reelected; Jackson J. Ayo, Raceland, speaker of the house of delegates, and Drs. William H. Seemann, New Orleans, and James Q. Graves, Monroe, delegate and alternate, respectively, to the American Medical Association.

MAINE

"Professor" Pole Fined.—On complaint from the state board of registration of medicine, "Prof." Samuel J. Pole, "suggestive therapeutist," was found guilty by jury at Rockland, about April 14, on a charge of practicing medicine without a license and was fined $200. Pole, according to his own testimony as stated in the Rockland *Courier-Gazette*, has practiced in every important city in the state. He claims never to have prescribed drugs or performed surgical operations, but to have practiced magnetic healing and naturopathy. Some of Pole's advertisements in the newspapers were read at the trial.

MASSACHUSETTS

Society News.—Members of the Worcester District Medical Society were guests of Dr. Harlan L. Paine, superintendent of the Grafton State Hospital, North Grafton, April 11, when Dr. Winfred Overholser, Boston, spoke on "Psychiatry and Massachusetts' Criminal Law," and Dr. Frank E. Stowell, Worcester, on "Physical Therapy in Rectal Diseases"; Dr. Edward H. Trowbridge, Worcester, gave a demonstration of the electrosurgical knife with regard to metastasis of cancer.——Dr. Thomas Archibald Malloch, librarian, New York Academy of Medicine, addressed the Boston Medical History Club, April 24, on "William Harvey."——Dr. Julius Bauer of the University of Vienna addressed the Suffolk District Medical Society, Boston, April 25, on "Problems of Obesity."

Annual Report of Massachusetts General Hospital.—The per capita cost for treatment of all patients in the Massachusetts General Hospital last year was $5.73 a day. According to the annual report of the trustees, this was 12 cents less than the cost in 1926. The hospital treated on an average 144 patients a day, free of charge, 143 patients a day who paid small amounts, and eighty-three patients a day who paid the regulation charge. The outpatient department, the Boston *Transcript* says, had 31,871 new patients. The receipts from the general wards amounted to $330,987, while the cost was $819,092. The receipts in the outpatient department were $104,020, and the cost was $177,731. The Massachusetts General Hospital receives no support from the state. There was a deficit of $90,000 for the year. The trustees hope to raise an annual sustaining fund of at least $200,000 to meet annual deficits. The hospital is being used more each year. The departments are growing. Its educational advantages to medical students and staff members are being used more freely, research has been actively carried on, and a number of graduate courses have been offered. The hospital needs additional material resources, a new ward building and a central clinicopathologic house.

MISSOURI

In the Penitentiary—Licenses Revoked.—The state board of health of Missouri has revoked the license of George Kowertz, M.D., Kansas City, and that of Edward G. Croxdale, M.D., South West City. The former is said to be an inmate in the federal penitentiary at Fort Leavenworth, having been sentenced for passing counterfeit federal reserve banknotes, and the latter an inmate of the Missouri Penitentiary, having been sentenced to life imprisonment for the murder of the night marshal in his home town.

Hospital News.—The St. Louis Baptist Hospital has arranged to purchase the old St. Louis Maternity Hospital, 4518 Washington Boulevard, for about $70,000, and the erection of a new building on the site for the Baptist Hospital is being considered.——An $80,000 annex to St. Elizabeth's Hospital, Hannibal, is being constructed.——St. Louis County has appropriated $100,000 to purchase a site for the St. Louis County General Hospital, for which the citizens recently voted a million dollar bond issue. The 28½ acre site is in Clayton, where the hospital would be convenient to members of the staff of the two medical schools. The formal purchase of the tract depends, however, on the repeal of a Clayton ordinance which prohibits the erection of a general hospital within its limits.

Society News.—Drs. Claude D. Pickrell and Virgil Loeb, St. Louis, addressed a joint meeting of the St. Francis County medical and dental societies, Farmington, March 15, on urologic and focal infection, respectively.——The Missouri University alumni will hold their annual dinner at the Daniel Boone Tavern, Columbia, May 15, 6:30 p. m., while the Alpha Kappa Kappa alumni will hold their luncheon at the Harris Cafe, May 16, at noon.——The Missouri alumni chapter of Phi Beta Pi, a national medical fraternity, will give a luncheon during the state medical meeting at the Columbia Country Club, May 16. Dr. Hermon S. Major, Kansas City, is archon of the chapter.——Drs. Wilbur K. Mueller and Harry G. Bristow, St. Louis, addressed the Howell-Oregon-Texas Company Medical Society, Cabool, March 20, as representatives of the state medical society, on "Roentgen Ray of the Gallbladder and Its Visualization" and "Gallbladder Drainage: Nonsurgical," respectively.——Dr. Oscar F. Bradford, Kansas City, Mo., addressed the Pettis County Medical Society, February 20, on "Treatment of Diseases of Infants and Children"; Drs. Alphonse McMahon and Otto J. Wilhelmi, St. Louis, addressed the society, Sedalia, March 19, on "Heart Disturbances in Thyroid Disease" and "Urologic Aids for the General Practitioner," respectively.——Dr. Frank G. Nifong, Columbia, president of the Missouri State Medical Society, addressed the Buchanan County Medical Society, April 4, on "Practice of Medicine Thirty-Five Years Ago."——The Jackson County Medical Society gave a "special history program," April 17, in response to a request; April 24, the society was addressed by Dr. Frank C. Neff, Kansas City, on "Nutritional Disturbances and the Teeth of Children," and by Jason Rogers of the Kansas City *Journal-Post* on "Necessity for the Education of Mothers Regarding Better Feeding of Their Children."

NEW JERSEY

Conference on Neonatal Mortality.—The New Jersey State Department of Health has arranged for the annual child health conference to be at Newark, May 3-4. The principal topic of discussion will be "Neonatal Mortality." Dr. Julius Levy, Newark, will preside. Among the speakers will be Dr. William Sharpe, New York, "Cerebral Hemorrhage in the New-Born"; Dr. Eugene S. Coler, New York, "Causes of Death in the First Month"; Dr. Ralph W. Lobenstine, New York, "Does Prenatal Care Prevent Early Infant Deaths?" Dr. George W. Kosmak, New York, "Relation of Obstetrics to Neonatal Mortality," and Dr. Herman Schwartz, New York, "Care of the Immature and Premature Baby." A number of New Jersey physicians will be on the program.

Society News.—Dr. Albert J. Winebrake, Scranton, Pa., addressed the Bergen County Medical Society, in March, on "Indications for the Use of Forceps."——Dr. Donald A. Curtis addressed the Medical Club of Hackensack, recently, on "Nasal Aspects of Gynecology."——Dr. Joseph Collins, New York, addressed the public meeting of the Essex County Medical Society, March 8, on "Meet the Doctor."——Dr. Linsly R. Williams, New York, addressed the Hudson County Medical Society, Jersey City, March 6, on "Need of the Early Diagnosis of Tuberculosis."——The Mercer County Medical Society was addressed, March 14, by Dr. Lawrence K. McCafferty, New York, on "Newer Treatments in Dermatology"; Dr. Oswald S. Lowsley, New York, discussed genito-urinary diseases. The society recently gave a testimonial dinner to honor those members who had been in practice forty years or more.——Dr. Walter G. Crump, New York, addressed the Union County Medical Society, March 27, on "Acute Generalizing Peritonitis."——A testimonial meeting was held, April 11, at the Essex Mountain Sanatorium, Verona, to mark the completion by Dr. Byron M. Harman of five years of service as medical superintendent and director. A new building project, costing about $1,000,000, is under way.

NEW MEXICO

State Medical Meeting at Albuquerque.—The forty-sixth annual meeting of the New Mexico Medical Society will be held at Albuquerque, May 10-12, under the presidency of Dr. Carey B. Elliott, Raton. Papers will be limited to twenty minutes, except those of the guest speakers. Drs. Charles W. Thompson, Pueblo, Colo., will speak on "Contribution of Psychiatry to Medicine"; George V. Brindley, Temple, Texas, "Cancer of the Rectum"; John V. Barrow, "Diagnosis and Treatment of Human Intestinal Protozoa"; Wilburn H. Smith, "Superior Mesenteric Thrombosis"; James F. Percy, "Cautery Surgery in Carcinoma Above the Clavicle"; the last three mentioned are from Los Angeles; Drs. Sanford M. Withers, "Principles of the Treatment of Cancer"; Ora S. Fowler, "Tongues and Edema"; Harvey W. Snyder, "Diagnosis and Treatment of Marie-Strumpell Osteoarthritis"; Robert G. Packard, "Treatment of Infantile Par-

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alysis"; the last four speakers are from Denver; Drs. Earle W. Phillips, Phoenix, Ariz., "The Rôle of Indiscriminate Tonsillectomy in Lighting Up the Tuberculosis Case"; Mallory B. Culpepper, Carlsbad, "X-Ray Dermatitis," and Crum Epler, Pueblo, Colo., "Gallbladder Surgery." Other speakers will be Drs. Victor Chesky, Halstead, Kan., and Alexius M. Forster, Colorado Springs. The house of delegates will meet Thursday and Saturday mornings. The New Mexico Tuberculosis Association will meet Saturday afternoon.

NEW YORK

First Case of Tularemia.—A steward in a Buffalo club recently became ill after scratching his finger while dressing rabbits. He developed what appears to have been a typical case of tularemia, and the diagnosis was confirmed at the hygienic laboratory, Washington, D. C. This is said to be the first known case of tularemia in the state. It was not known, when *Health News* gave out the report, where the rabbits had come from.

Automobile "Owners" Plead Poverty at Hospital.—The following editorial is from the *Rural New-Yorker:*

> One of the officials of a suburban hospital remarked recently that they all dreaded Sunday, because it meant a constant stream of automobile accidents, some trifling, but many very serious. A great proportion of the accidents are treated free in the dispensary, the persons injured pleading poverty. As these people come largely from other localities, it means a heavy expense borne by those who support the hospital. One may quote the case of the Good Samaritan, but it must be remembered that the man who fell among thieves was not taking a Sunday joy-ride. A surprising number of the people who "own," more or less, a pleasure car, have no money to cover the cost of accidents. It is a serious question in the metropolitan area, and some of us who help to support hospitals, but do not feel able to drive a car, are growing a trifle unsympathetic. The Sunday driver of the stupid or reckless type is becoming a liability everywhere.

Special Meeting to Vote on Buffalo City Hospital.—The Medical Society of the County of Erie called a special meeting, April 16, at the school of medicine of the University of Buffalo to vote on a resolution which had been introduced at the February meeting and discussed at the March meeting. The resolution states that the Buffalo City Hospital has been extravagant in its running expenses and has pauperized the public until there is a horde of people expecting treatment and hospital care free, establishing a custom which it will take years to overcome. This has been detrimental to the private hospitals, depriving them of ward cases necessary to give experience to interns. It was therefore resolved that the society does not deem state medicine or socialistic medicine beneficial to the public or to the profession and that the Buffalo City Hospital should be maintained to take care of contagious diseases, persons in need of psychopathic investigation, and those who are really indigent, and that no further extension of the institution should be made, as it is more than large enough to accommodate such as should be sent there for ten years to come.

New York City

Harvey Society Celebration.—The Harvey Society of New York will celebrate the three hundredth anniversary of the publication of Exercitationes de Motu Cordis et Sanguinis by William Harvey, May 11. There will be a dinner followed by an address by Dr. Alfred E. Cohn, and an exhibition in the library of the academy of medicine of Harveiana, arranged by Dr. Thomas Archibald Malloch, the librarian. The medical public is cordially invited to the exhibition and the address. This will be the final Harvey lecture of the current year.

Society News.—The New York Society for Clinical Psychiatry met at the U. S. Veterans' Hospital, 130 West Kingsbridge Road, April 12; Dr. Chester L. Carlisle read a paper on "Clinical Presentation of Epileptic Psychoses."——Hospital center number 6 met, April 27, at the army building, 39 Whitehall Street, and was addressed, among others, by Major S. Adolphus Knopf, medical reserve, on "Something Old and Something New in Tuberculosis," and Dr. James A. Boon, chief, federal narcotic bureau, on "Regulations Governing the Harrison Narcotic Law."

Rotary Honors Homer Folks.—Mr. Homer Folks, for thirty-five years secretary of the State Charities Aid Association, was awarded the service medal of the Rotary Club of New York at a recent joint meeting with the State Conference on Crippled Children. Mr. Folks is said to be the fourth person to be so honored. In accepting the medal, Mr. Folks said, according to *Health News,* that only one in four crippled children is receiving, at present, the special care and treatment which the law provides for all. He surveyed the plans for identifying and helping the 30,000 crippled children in the state.

Personal.—Dr. George F. Brewster, who was recently transferred from U. S. Veterans' Hospital number 81, Kingsbridge Road, to medical officer-in-charge of the veterans' hospital at Northport, Long Island, was the recipient of testimonials and gifts by the hospital personnel previous to departure.——Dr. George Bevier, Jr., formerly with the International Health Board of the Rockefeller Foundation, now is at Bogota, Colombia.——The class of 1918 of University and Bellevue Hospital Medical College will hold a reunion dinner, May 3. Members interested should communicate with Dr. Joseph Eidelsberg, 235 West Seventy-Sixth Street.

Hospital News.—The present Italian Hospital building at Eighty-Third Street and the East River has been sold for $1,200,000. A new 225 bed Italian Hospital to be built on another site will be in use by Oct. 1, 1929.——At the ceremony of laying the cornerstone of the new 175 bed French Hospital, 324-340 West Thirtieth Street, April 17, it was announced that Mr. Paul J. Bonwit had given a $50,000 endowment fund for the study of applied immunology, and that a special department for this work will be formed under the direction of Dr. Maximilian A. Ramirez.——The United Hospital Fund has added three hospitals, making the total in the fund fifty-nine, the new ones being the Brooklyn Eye and Ear, the Bronx and the Brooklyn Beth Moses hospitals. The fund announces that thirty hospitals have opened clinics for hay-fever cases, which is an increase of eighteen such clinics since 1927.

Dr. Stewart Honored.—Four classes of the University and Bellevue Hospital Medical College (1928-1931) presented a bust of Dr. George David Stewart, who has been a member of the faculty for thirty years, to New York University at a ceremony in Carnegie Lecture Hall, April 18. The principal speaker at the unveiling was John Finley, editor of the New York *Times;* the chancellor, Elmer Ellsworth Brown, accepted the gift in the name of the university. The dean of the medical school, Dr. Samuel A. Brown, presided. Dr. Stewart is a graduate of the Bellevue Hospital Medical College and, at present, is professor of surgery and director of the surgical service, third division, Bellevue Hospital, visiting surgeon to St. Vincent's Hospital and consulting surgeon at Englewood and Beth Israel hospitals. The bust was fashioned by the Russian sculptor, Jules Leon Butensky.

Diseased Canned Chicken.—Health Commissioner Harris ordered the chicken packing and canning plant of A. Silz, Inc., closed, April 21, following an inspection by members of the city health department in cooperation with a representative of the federal government. According to the New York *Times,* Commissioner Harris announced, in his closing order, that diseased dressed poultry had been found in the Silz plant, and that about 20 per cent of the poultry being canned by the company should have been condemned before it was killed. Furthermore, frozen poultry sent to the plant from Chicago in barrels had been shipped without the removal of the entrails. He announced that other plants under suspicion would be inspected as soon as possible. The Silz company stated that the closing order was the result of a misunderstanding and a mistake, and that counsel had been employed to protect its interests.

PENNSYLVANIA

Winners of Case Report Contest.—The annual case report contest sponsored by the Allegheny County Medical Society for interns of approved hospitals in Allegheny was awarded to Dr. Eugene A. Conti of the Pittsburgh Hospital. Second prize was awarded to Dr. William B. McLaughlin of St. John's General Hospital. Honorable mention was given to case reports submitted by Dr. William C. Hutchinson of Mercy Hospital, Dr. John H. L. Heintzelman of Mercy Hospital, and Dr. Herbert D. Ingram of Western Pennsylvania Hospital of Pittsburgh.

Veteran Physicians Honored.—The Lawrence County Medical Society gave a testimonial dinner, April 11, at New Castle, in honor of Drs. Robert A. Wallace and David R. Harris, each of whom has served the community as medical practitioner for fifty years. They were presented with billfolds inscribed "From the Members of the Lawrence County Medical Society Commemorating Fifty Years of Active Practice in Medicine." Among the speakers were Drs. Theodore Diller and Harold A. Miller, Pittsburgh, who read a paper on "Toxemia of Pregnancy," and Jefferson H. Wilson, Beaver. Guests were present from many neighboring cities. Dr. Franklin W. Guy, president of the medical society, presided.

Another Unit for Pittsburgh's Medical Center.—About six years ago, plans were made for the development of the medical and hospital resources of Pittsburgh into a medical center on a 12 acre tract of land adjoining property of the University of Pittsburgh. The plan included the construction of a 600 bed general hospital, a 200 bed children's hospital, a 100 bed eye and ear hospital, a new medical school, a nurses' home and training school, a free dispensary, a medical library, and quarters for the Red Cross and public health nurses. The children's hospital has been erected and is in operation. The plans for the general hospital are approaching completion. A gift of $750,000 has just been received from the Falk brothers of Pittsburgh for the building of a free dispensary, which will be equipped with all modern facilities for teaching. The 300 bed Elizabeth Steel McGee Hospital for Obstetrics and Gynecology, which is nearby, is in affiliation, and the medical control is under the direction of the school of medicine of the University of Pittsburgh. The Tuberculosis League Hospital is also directly affiliated. The medical function of all of these affiliated institutions is under the direct control of the school of medicine. The dean of the medical school, Dr. Raleigh R. Huggins, considers that the most important feature of this great plan has been its ability to persuade the trustees of these institutions that service in the hospitals will be greatly stimulated by the presence of medical education.

Philadelphia

New Medical Building for Temple University.—A site near the Samaritan Hospital has been selected for a new building for the school of medicine of Temple University, which now has inadequate quarters in the business section of the city. The six story building will conform with the Georgian design of the Samaritan Hospital. It will provide space for carrying on an extensive program of research and for classrooms and laboratories. The public will be requested to contribute to a $1,000,000 fund for its erection and the expansion of the medical department. The expansion program was described at a dinner at the Bellevue-Stratford Hotel, April 19, attended by physicians and laymen. Among the speakers was Dr. Nathan P. Colwell, secretary, Council on Medical Education and Hospitals of the American Medical Association. Subscriptions to the medical school fund will be received by volunteer workers under the supervision of committees with headquarters at the Samaritan Hospital. A nucleus of the fund is already available from contributions made to the "Greater Temple University" development project by members of the faculty and students of medicine.

Society News.—The reunion of the class of '78 of Jefferson Medical College in Philadelphia, March 31, was attended by thirteen members from a class of 203; Dr. Lawrence Webster Fox presided at the dinner.——The new bronchoscopic clinic at the graduate school of the University of Pennsylvania offers special two-week courses to otolaryngologists and surgeons who previously register with the dean. The periods for the courses announced are May 28-June 9 and August 6-18. The clinic has been named in honor of Dr. Chevalier Jackson, its director.——At the twentieth annual meeting of the Undergraduate Medical Association of the University of Pennsylvania, April 26, Dr. Anton J. Carlson, University of Chicago, spoke on "Recent Studies on the Thyroid Gland"; Dr. Allen O. Whipple, professor of surgery, Columbia University College of Physicians and Surgeons, New York, "Bacteriologic Problems in Their Relation to the Surgical Service," and Dr. Chevalier Jackson, "Relation of the Bronchoscope to Research."——Among others, Dr. Charles S. Potts addressed the Philadelphia Neurological Society, April 27, on "Intra-Uterine Poliomyelitis"; there was a lantern slide demonstration by Dr. Nathaniel W. Winkelman.

TEXAS

Dr. Bethel Appointed Dean.—The board of regents of the University of Texas, April 9, elected Dr. George Emmett Bethel, director of the university health service, as dean of the state medical college, Galveston, effective, September 1, to fill the vacancy caused by the resignation of Dr. Henry Hartman. Dr. Bethel was born in Texas, graduating from the university in 1917 and from the medical department of the university in 1923. He has served as instructor and as adjunct professor and associate professor of anatomy in the medical college, as intern in St. Mary's Infirmary and as resident physician in the Philadelphia General Hospital; last year he was appointed director of the university health service.

State Medical Meeting at Galveston.—The sixty-second annual meeting of the State Medical Association of Texas will be held at Galveston, May 8-10, under the presidency of Dr. Joseph Gilbert, Austin. Registration will be at the Hotel Galvez, and all general meetings at the Garden of Tokio. The guest speakers will be Drs. James G. Townsend, U. S. Public Health Service; Ursus V. Portmann, Cleveland; Lumey V. Ragsdale, Birmingham, Ala.; Charles H. Mayo, Rochester, Minn.; Amos R. Koontz, Baltimore; Adna G. Wilde, medical corps, U. S. Army; Rolla E. Dyer, U. S. Hygienic Laboratory, Washington, D. C.; Albert H. Brewster, Boston; Jacob P. Greenhill, Chicago; Walter E. Sistrunk, Rochester, Minn.; Charles W. Duval, New Orleans, and Wesley C. Cox, medical corps, U. S. Army. The *Texas State Journal of Medicine* considers the scientific program one of the best. Many Texans will take part. In addition to section meetings and general meetings, the Texas Railway Surgeons, the Texas Radiological Society, the Texas Pediatric Society, the Texas Pathological Society, the Texas Dermatological Society and the women's auxiliary of the state medical association will hold meetings at this time. Clinical luncheons will not be held this year on account of the numerous other features. The sections will hold all meetings at the medical college, where the scientific exhibits will be also. The Galveston County Medical Society will serve luncheon at the medical college, Wednesday and Thursday, as a convenience to those who desire to remain there for the afternoon sessions; the society in cooperation with the women's auxiliary has arranged for receptions, dinners, teas and luncheons. The churches offer their pulpits to the profession for public health lectures.

WISCONSIN

The State Needs Physicians.—The state civil service commission, Madison, announces that applications will be received until July 1 for examination for the position of clinical director to assume responsibility for the administration of the medical and psychiatric service in a state hospital with a salary of $200 a month and complete maintenance. Applicants must be graduates of a recognized medical school, licensed to practice in Wisconsin and with at least two years' experience, preferably at an institution caring for the mentally disordered. The commission will supply forms for application on request, and candidates who meet the preliminary requirements will be called for an oral interview. The civil service commission also announces that it will receive applications for the positions of senior physician and junior physician, the duties of which will be to have charge of the medical service of a hospital or department or to assist therein. The salaries will be $165 and $125 a month and complete maintenance, respectively, and the qualifications are practically the same as noted. The commission will also receive applications for the position of occupational therapeutist, which requires a high school education and special training in occupational therapy and special experience at an institution caring for the mentally disordered. The salary is $90 a month and complete maintenance.

GENERAL

Conference on Cancer Research.—Surg. Gen. Hugh S. Cumming called a conference which met, April 9, in the office of the public health service, Washington, D. C., to discuss general conditions of procedure in cancer research. A subcommittee was appointed to arrange a program for research to be submitted within two weeks. The members were Drs. Francis Carter Wood, New York; James B. Murphy, New York; Warren H. Lewis of the Carnegie Institute, Washington, D. C.; William H. Howell, Baltimore, and Joseph W. Schereschewsky, Boston, of the public health service. The conference was attended by other specialists in cancer work.

House Authorizes Millions for Mentally Ill Veterans.—The House of Representatives passed the veterans' bureau hospitalization bill, April 16, authorizing an expenditure of $15,000,000 to care specifically for the increasing load of mentally ill World War veterans. The reasons for the enactment of this legislation include the fact that there is a shortage of beds for neuropsychiatric patients; that nearly one half of all the veteran patients are suffering from mental diseases, and that the number of such patients will be mate-

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rially increased in 1930. The committee on World War veterans legislation accepted the views of neuropsychiatric specialists that it is of the utmost importance that mental cases be given hospital treatment. The committee accepted the recommendation of the veterans' bureau to the effect that there is no need for additional construction of buildings for the care of soldiers suffering from disabilities other than mental. The report of the committee shows that on February 29 there were in government hospitals 7,301 patients with tuberculosis; 6,985 for general medical and surgical treatment, and 12,857 neuropsychiatric patients. The number of mental patients in government hospitals therefore almost equals the combined total of all other patients. The hospitalization bill was passed by unanimous action of the House of Representatives.

Methods for Malaria Control.—The malaria section of the seventh congress of the Far Eastern Association of Tropical Medicine, which met in Calcutta in December, 1927, stressed the need of malaria research officers, and of expert malarial engineers. The section passed resolutions stating that, in many instances, a great increase in malaria was caused by mosquito reproduction around engineering works, either during construction or afterward, as a result of the different conditions brought about. The congress held that plans for canals, railways, harbors and similar engineering works should be submitted to the proper public health authorities before being sanctioned by governments. The fact was emphasized that there is no single method of malaria control applicable to all conditions. Nevertheless, the congress considered that for large public works, plantations, mines and towns, the method of controlling the breeding places of mosquitoes should be employed whatever other antimalaria measures were enforced and that this should be effected by permanent works which would eliminate entirely the source of mosquito breeding for rural areas, especially those with scanty populations. There is a variety of methods of prevention, including drainage, jungle clearing, jungle preservation, bonification, the promotion of agriculture, improvement of housing and general economic condition and the education of the people. The use of antimalarial drugs, the screening of buildings, the systematic killing of mosquitoes and many other special methods are to be considered in their proper relation.

Fund for International Study of Infantile Paralysis.—Jeremiah Milbank, New York, has given $250,000 for a three-year study of infantile paralysis by an international group of scientists, the chairman of which is Dr. William H. Park, New York, and the vice chairman, Dr. Joseph A. Blake. Chicago, Columbia, Harvard, and New York universities will participate in the research together with the University of Brussels and the Lister Institute of London. The committee hopes to enlist the cooperation of other institutions here and abroad. Participating institutions will have absolute freedom in their own investigations, but the results studied and coordinated by the committee will represent a joint piece of work. The death rate from poliomyelitis in 1927 was higher than in any year since the epidemic in 1916. In addition to Drs. Park and Blake, the head of the department in charge of the work in each institution is a member of the committee; the other members of the committee are:

Edwin O. Jordan, Sc.D., University of Chicago.
Dr. Ludvig Hektoen, University of Chicago.
Dr. Frederick P. Gay, Columbia University College of Physicians and Surgeons.
Dr. Frederick Tilney, Columbia University College of Physicians and Surgeons.
Dr. Milton J. Rosenau, Harvard University Medical School.
Dr. Hans Zinsser, Harvard University Medical School.
Lee K. Frankel, Ph.D., Metropolitan Life Insurance Company.
Sir Charles Martin, Lister Institute, London.
Dr. Jules Bordel, University of Brussels.
Samuel M. Greer, Washington, D. C., treasurer.
Dr. Josephine Neal, New York, secretary.

Supreme Court Upholds Narcotic Law.—In a decision announced, April 9, the Supreme Court of the United States held that the Harrison Narcotic Law was a valid and constitutional exercise of authority by Congress to raise revenue while suppressing the illegal use of narcotics. The court, in a decision by Chief Justice Taft, held that Thomas J. Casey, a lawyer of Seattle, and Frank Nigro, Kansas City, Mo., must serve the sentences imposed on them for violating the narcotic law. Justices McReynolds, Sutherland and Butler, who dissented, did not agree among themselves on the features of the law which in their judgment rendered it invalid. Justice McReynolds condemned the law in its entirety, while Justices Sutherland and Butler considered it invalid because of certain discriminations which it made in licensing the sale of narcotics. Discussing the charge that the law was a mere pretext as a tax measure, and was an attempt on the part of Congress to exercise the police power reserved to the states by regulating the sale of narcotic drugs, Chief Justice Taft declared that recent amendments had made it a revenue producer, and that if there had been any ground for the suggestion that it was being enforced under a subterfuge, it had been removed. Whatever might be the right of a resident of a state to buy opium under state laws, there could be no valid contention that Congress could not place an excise tax on its sale. The court for several years has invited a new attack on the constitutionality of the law after it had by a 5 to 4 division sustained the law.

Another Cradle of Civilization Unearthed.—After two years of excavation with the assistance of 800 laborers and a staff of experts, Sir John Marshall, director, Archeological Survey of India, has unearthed the central portion of a great city on the banks of the Indus River in India. Sir Arthur Keith says in the New York *Times* that heretofore the cradles of civilization were in the valley of the Nile and in Mesopotamia. Archeologists have there unearthed "steps" leading back into time at least 5,000 years. The city of Mohenjo-daro, which is being unearthed in India, is 1,500 miles from Babylon, yet it is fashioned on the same basal plan. Some massive foundations found are considered to represent temples, and others treasuries of a vastly rich state. The people had stores of jewels and gold, and ornaments, necklaces, earrings and studs of gold have been found. Mohenjo-daro approaches our modern standard of sanitation, Sir Arthur says, more than any other known city so old. There are well laid bathroom floors, latrines, drains beneath the house floors, vertical pipes to carry the overflow of rain water and a great conduit along the street to carry sewage. These drains have been laid bare. There has been found a ruin which may have been a public bath. The inhabitants of this city had sheep, pigs, dogs, herds of oxen and vast fields of wheat, some dried grains of which Sir John Marshall has found specimens. One happy finding was a toy animal made of clay. One can fancy, Sir Arthur says, the Mohenjo-daro parent pulling strings that moved the uncouth head, eliciting peals of laughter from his child. This relic, he says, links together human natures separated by an interval of fifty centuries. There is some proof of other buried cities in this region. It seems probable, therefore, that our view of the cradle of civilization as being confined to a single valley must change to the view that early civilized man occupied an immense tract of southwestern Asia extending from India to the Mediterranean. Egypt lies on its fringe.

CANADA

Personal.—Dr. Charles H. Mayo, Rochester, Minn., delivered the Balfour lecture on Lister Day, April 5, at the University of Toronto on "Focal Infection in Chronic and Recurring Diseases."——Dr. John McLean, for twenty years health officer of the town of Orillia, celebrated his "nineteenth birthday," February 29.

Toxin-Antitoxin Discontinued in Canada—Toxoid Used.—The Canadian Social Hygiene Council states that all provincial health departments in Canada immunize children against diphtheria but none of them use toxin-antitoxin, the manufacture of which was discontinued in Canada some years ago. Immunization in Canada is being done by means of toxoid. The council received a cable from the director of public health of Sydney, Australia, concerning deaths reported to have occurred at Queenstown following "diphtheria inoculation." The cable stated that the product used was toxin-antitoxin, and that a commission of the federal government of Australia is making a full investigation of the circumstances. It appears that a number of children had been inoculated from the same batch of material between January 17 and 24 without any ill effects, and that only those who were inoculated after January 27 became ill. The Canadian Social Hygiene Council also points out that there was not a death from diphtheria in the city of Brantford in the four years following January, 1924. During 1923, a campaign of immunization against diphtheria was carried on. For years before, diphtheria had claimed, on an average, the lives of six children in Brantford. When the four year record was broken in January, 1928, by the death of a 3 year old child, the facts were placed before the city council. It was stated that a new generation had appeared which was not immune to diphtheria, and the council voted funds for another immunization campaign. More than two thirds of the local physicians offered their services and more than half the school population presented requests for immunization.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 31, 1928.

Sir David Ferrier

The death of Sir David Ferrier, M.D., D.Sc., F.R.S., in his eighty-sixth year, removes the last of that galaxy of British workers who, toward the end of the nineteenth century, may almost be said to have created modern neurology —Hughlings Jackson, Ferrier, Gowers, Horsley, to mention only the most eminent. Born in Aberdeen, David Ferrier was educated at the university of that city, where he came under the influence of Alexander Bain, the famous philosopher and logician. This turned his first interests in the direction of psychology. He graduated M.A. in 1863, with first class honors in classics and philosophy, and then went to Heidelberg to continue his studies. In 1865 he returned to Scotland and entered the medical school of Aberdeen University. His career in medicine was equally distinguished. He won many of the university prizes and graduated M.B. with first class honors. For a time he acted as assistant to Dr. Laycock, professor of medicine in the university. He then went into practice in England as an assistant to a general practitioner at Bury St. Edmunds. During this time he made researches on the comparative anatomy and physiology of the brain, which he embodied in his M.D. thesis, "On the Comparative Anatomy of the Corpora Quadrigemina," which gained the gold medal in 1870. He next came to London and was made assistant to the physiologist Prof. Burdon Sanderson, lecturer on physiology at the Middlesex Hospital. In 1872 he succeeded Professor Guy in the chair of forensic medicine at King's College, London. This association is reflected in a treatise on forensic medicine by Guy and Ferrier which was very popular in its day.

He was appointed assistant physician to King's College Hospital and began those researches on the physiology of the brain which made him famous. He was stimulated to his first experiments on the brain by the new teaching in the sixties of his friend Hughlings Jackson on theoretical localization, the result of the study of unilateral fits produced by tumors. It is true that, similarly stimulated, Fritsch and Hitzig had previously done important work on localization, but Ferrier's researches were fuller and more methodical. By faradic stimulation of the cortex he proved Jackson's theories of localization to be right and laid for all time the groundwork of cerebral localization. His work was extended and confirmed by two other British workers, Beevor and Horsley. However, Ferrier made one mistake. He concluded, as the result of producing hemiopia by cauterization of the angular gyrus, that the half-vision center was situated here. The later work of Sharpey-Schafer showed that the half-vision center is around the calcarine fissure and that Ferrier in his experiment injured the subjacent optic radiations. His experiments on dogs infuriated the antivivisectionists so much that they concentrated their attacks on him and held his name up far and wide to obloquy. In 1874 he delivered his epoch-making Croonian Lectures before the Royal College of Physicians on the Localization of Function in the Brain.

In 1876 appeared his pioneer work on "The Functions of the Brain," which was at once recognized as opening a new path in a very difficult subject. The book owed a good deal to the "scientific imagination" of Hughlings Jackson, whose theories Ferrier's experiments were devised to test. This work secured for him the highest scientific distinction in this country, the F.R.S. In 1880 he was appointed assistant physician to the National Hospital for the Paralyzed and Epileptic, the home of British neurology, to which all the great neurologists of his day were attached. In 1889 a chair of neuropathology was specially created for him at King's College. He summarized the clinical aspect of his work in a lucid essay on the Regional Diagnosis of Cerebral Disease, contributed to Allbutt's System of Medicine. Honors were showered on him from all parts. In 1878 he was made laureate of the Institut de France; he was awarded the Marshal-Hall prize in 1883, the Baly medal in 1887, the royal medal of the Royal Society in 1890, and the Cameron prize of the University of Edinburgh in 1912. He was one of the founders and editors of *Brain*, the official organ of the Neurological Society. He was small and agile, very alert mentally, and always seeking for information. He was a clear thinker, a precise writer and a good speaker with a slight Scots accent which half a century of residence in London had not altered much. He preserved his vigor and interest in science until nearly the end of his long life. He married in 1874 and leaves a son and a daughter, the former a well known architect.

The Inventor of the First Ophthalmoscope

In the columns of the *Times* Mr. William E. Hardy, assistant editor of the *Optician*, points out that the current view which ascribes the invention of the ophthalmoscope to Helmholtz is not correct. Charles Babbage, who succeeded G. B. Airy as Lucasian professor of mathematics at Cambridge, produced the first ophthalmoscope. He showed the instrument to a medical friend, who doubted its usefulness. Not till twenty years later did Helmholtz produce another ophthalmoscope, of which he lived to see the value universally recognized. It is also interesting that Airy, though not the first to appreciate the defect of astigmatism, was the first to devise a method of correction. He instructed Mr. Fuller, an optician of Ipswich, to grind cylindric lenses to prescription. It is noteworthy that these eminent men were neither oculists nor opticians but mathematicians. The existence of genuine claims for inventions and discoveries other than that of the person to whom credit is generally given is very common. It is generally held that it is not the first man to invent or discover who deserves the credit but the man who independently of previous workers makes the discovery for himself and forces it on an always unwilling world. The credit due to Helmholtz is therefore not diminished by the previous invention of Babbage.

London's Deadly Streets

Street accidents due to the motor traffic continue to increase to an alarming extent. From 19,586 in 1917 they have increased to 48,153 in 1926. Figures for 1927 have not been published, but it appears that the increase goes on. However, the number of fatal accidents for the last quarter of 1927 is officially declared to be 312, which amounts to more than three a day. The death of a young surgeon of great promise, Mr. L. R. Fifield, who, though only 30, had produced two successful surgical books and was surgical registrar and first assistant to the surgical clinic of the London Hospital, has just been announced. He was knocked down by a motor lorry and killed while crossing the street with his wife.

Smallpox Spread by Tramps

The neglect of vaccination is the most important cause of the outbreaks of smallpox with which we are troubled. This may be called a negative cause. In the *Times*, Dr. Duncan Forbes, health officer of Brighton, points out a positive cause. Smallpox spreads in the southeastern counties largely because of the uncontrolled movements of tramps known to have

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been in contact with the disease. The ministry of health is depending for control on the careful inspection of vagrants in the casual wards, but overlooks the fact that the cases are not diagnosed there before many contacts have been infected; also that, when finances allow, tramps sleep in common lodging houses. A tramp arrived at a casual ward with a well marked rash. There he was in contact with seventy-eight tramps, forty-one of whom left next morning before the case was diagnosed. Of the thirty-seven remaining, twelve refused vaccination. As there were no legal powers to detain them over the incubation period, these unprotected men were allowed to leave and wander from town to town. Two of them are now known to have developed smallpox, one being discovered at least four days after the appearance of the rash. These men were freely mixing with others at the time of their greatest infectivity. Dr. Forbes calls for legislation to give legal powers to segregate vagrant casuals during the incubation period.

PARIS

(From Our Regular Correspondent)

March 21, 1928.

Adoption of the Bill Pertaining to Social Insurance

The chamber of deputies, after two sessions devoted to its discussion, adopted unanimously the bill pertaining to social insurance without modifying in any manner the text accepted by the senate. M. Poincaré's government had urged the adoption of the bill before the final adjournment of the chamber, which took place the day following. Nevertheless, it is a matter of common agreement in parliament that the law in its present form is impracticable. The critical objections to the bill, which the medical profession has raised, attract little attention. Parliament is not vitally interested in the welfare of physicians, in spite of the fact that there are many physicians among the members, but those have, for the most part, given up their profession in order to devote themselves exclusively to politics. What appeals to everybody is the unfortunate economic side of the problem. The application of the law will increase by five billion francs the state expenditures. It will exact a like amount from the employers and the workmen, but the latter announced long ago, through their fellow socialists in the chamber of deputies, that they would refuse to accept any deductions from their wages or salary. The employer, whom the law makes responsible for making the deductions, will add to the price of food and other products such sums as he is required to pay, and the cost of living, already very high, will increase considerably, which will lead to a new upward readjustment of wages and taxes. Agriculturists will derive very few advantages from the law, which was proposed mainly for the benefit of workmen, but the agriculturists will pay the cost of it, in part. The law will therefore breed discontent everywhere. In spite of these facts, all the deputies voted for the bill for fear of being reproached for indifference to what has been presented to the public as a form of social progress. The whole problem constitutes, in the opinion of the journals, a parliamentary paradox, and an illustration of the baneful effect of words on the popular imagination. Moreover, during the discussion before the chamber of deputies, it was admitted on every hand that the bill needed modification in many particulars, for the text as it stood bristled with contradictory statements, the natural result of the fact that the component parts had been voted on successively and without coordination. The law comprises a large volume that few deputies have even read entirely. It was agreed that the application of the law should be postponed for two years in order to permit the future chamber of deputies to make the necessary corrections.

The Variable Toxicity of Human Blood Serum

M. Lumière, by previous researches, established that human blood serum is toxic for the guinea-pig in 50 per cent of the cases. He has recently established, by using the same method, a relationship between the toxicity of the blood of the mother and that of the fetus. He has communicated the results of his researches to the Academy of Sciences, of which he is a member. The blood serum of women during parturition was found to be toxic for the guinea-pig in only two cases out of thirty-seven. The blood serum of the newborn, collected by severing the umbilical cord, was found toxic in nine cases out of thirteen. The new researches bring out the high natural toxicity of fetal blood, which may be one of the causes of the toxicity of the blood of the mother in eclampsia.

Disturbances Caused by the Students of the University of Paris

The students of the Faculté de médecine, for the past two weeks, have prevented the newly appointed occupant of the chair of histology, M. Champy, from delivering his lectures. M. Champy was chosen by the minister of public instruction as the successor to Professor Prenant, deceased. According to regular usage, the minister makes his choice from two candidates designated after mature deliberation by the council of the professors of the University of Paris. The first and second choice, respectively, of the council were: M. Vernes and M. Mulon, both adjunct (agrégé) professors of the University of Paris. The minister may choose, however, from another list presented by the council on higher instruction, but, as a rule, the names on this list coincide with the names on the list of the council of the professors. But, in this instance, the higher council had added the name of M. Champy. It is very exceptional for the minister of public instruction, who is always a political appointee, to fail to approve the first choice of the council of the faculty. M. Herriot took advantage, in this instance, of his privilege in choosing a name not on the list of the faculty council. The students, however, accuse the minister of having shown political favoritism and of having induced the council on higher instruction, which is composed of functionaries, to add the name of his favorite candidate to its list. Their anger was aggravated by the fact that, according to an age-old tradition, the professors of the University of Paris are always chosen from the adjunct (agrégé) professors of the faculty, vacancies in whose ranks are filled on the basis of competitive examinations, which have a special and peculiarly demonstrative value as regards Parisian contestants, since they, being more numerous, are subjected to a more severe process of elimination. An agrégé professor of the University of Paris who does not succeed in securing a chair feels that his professional career has been blighted. There have been a number of instances, in late years, in which the minister of public instruction has appointed professors from the provinces to chairs in the University of Paris. Whenever this has occurred, the students of the University of Paris have failed to welcome the new arrival from the provinces, and possibly even the professors view with secret satisfaction the students' manifestations of displeasure. When, twenty years ago, M. Nicolas (coming from Nancy) received an appointment as professor of anatomy at the University of Paris, and later, M. Prenant (likewise from Nancy) was chosen as professor of histology, there were mutinous demonstrations on the part of the students. Three professors in succession have been called from the provinces as instructors in histology at the University of Paris. There are in Paris a number of excellent research workers in the difficult science of histology, which never enriches any of its devotees, and the most that any of them can hope for as a final reward

for their diligence is a professorial chair. It is this hope that keeps them encouraged, and it is to be feared that, if they suffer constant disappointment through the decisions of ministers of public instruction, Paris will soon cease to be an important center of histologic study, which it became through the efforts of such men as Bichat, Robin, Ranvier and Mathias Duval. In the case of M. Champy, the dean of the faculty, after the first two lectures of his course, during which the students, by their uninterrupted clamor and their bombardment of the professor with fruits and vegetables, made it impossible for the incumbent to speak, decided to suspend the course for a period of one month. At this announcement, the disturbances became even more violent, for that would prevent the students from presenting themselves at the examinations at the time desired. The police was compelled to intervene, for the demonstrations continued outside the university precincts, in the adjoining streets, and several young men were injured.

The Death of Professor Guignard

The death of Professor Guignard at the age of 76 is announced from Paris. Famed as a botanist, he had devoted himself particularly to micrography and microchemistry of plant tissues, cellular division, and mitochondria, with their applications to microbiology. He served first as a professor in the Faculté des sciences in Lyons; later in the Faculté de pharmacie in Paris, where he became a director in 1900. In 1895, he was chosen member of the Academy of Sciences, and in 1919 became its president. He was also a member of the Academy of Medicine. He held the rank of commander in the Légion d'honneur.

BELGIUM

(From Our Regular Correspondent)

March 2, 1928.

The Belgium Medical Convention

This year, the annual (eighth) session of the Belgium Medical Week, or the Journées médicales belges de Bruxelles, will be held in April, two months earlier than usual. The change was made in order to afford the conventionists an opportunity to attend the flower exposition that is held in Ghent every three years. Among others the following well known men have indicated a willingness to participate: Drs. Gley, Donati, Damas Mora, Pautrier, Söderbergh, Bordier, Egas Moniz, Bastos, Noël Fiessinger, M. P. Weill, Sanvenero-Rosselli, P. Nolf, E. Renaux, J. Duesberg, D'Hollander, E. Zunz. The convention will open April 22, and the inaugural address will be delivered by the prime minister, M. Henry Jasper, on the subject of the council on medical ethics (*ordre des médecins*).

Study Scholarships for the Congo

The minister of colonies has established four study scholarships for the benefit of young physicians desiring to spend from six to twelve months in the Congo region. The beneficiaries will be attached either to one of the large hospitals for the natives (Boma, Leopoldville, Coquilhatville, Stanleyville, Elisabethville) or to a laboratory (Leopoldville, Stanleyville, Elisabethville).

Chemical Warfare

An international committee of experts for the study of the protection of the population against chemical welfare met recently in Brussels. The papers of the various subcommittees were presented, beginning January 16 and closing with a plenary session January 18. The committee was charged solely with preparatory work. The conclusions that the experts reached must now be studied by the international committee of the Red Cross societies, which will submit them for final approval to the thirteenth international conference, which will meet at The Hague next October and will be attended by the delegates of the signatory powers of the Geneva Convention and by the delegates of the Red Cross societies.

Three principal points were the object of the attention of the committee of experts. These three points were: collective protection, instruction and education of the public, and division of the country into danger zones with a view to protection against chemical warfare. Many related questions were taken up; for instance, protection against nonpersisting gases, examination of localities susceptible of being transformed into shelters, formation of disinfection crews, protection of food supplies, and the manufacture, upkeep and application of protective apparatus and protective garments.

The instruction and education of the public will be effected by the organization of special courses by the Red Cross society, and by the creation in each country of a joint committee comprising delegates of the Red Cross society, and delegates from all the public services and private organizations that are in a position to collaborate for the protection of the population. The protection of the country and its division into danger zones should be provided for by the organization of a signaling system, transportation for the evacuation of the population, and first-aid stations. A resolution was passed to the effect that the government and the Red Cross societies should exchange notes regularly in regard to their researches on the measures of individual protection. The view was expressed, furthermore, that in times of peace the Red Cross should work out a program in regard to its mode of intervention in time of war.

During the session of January 17, the first subcommittee, studying the question of places utilizable for collective protection, reached the conclusion that only subterranean shelters are truly effective. As for the utilization of existing buildings, it is a question whether the atmosphere within can be kept reasonably pure through control of pressure relations within and without. Is it feasible to provide individual masks for a whole country, and is it not possible to design a simple type of mask that can be sold on the market or made at home? These are some of the points that will be studied at future meetings. The new education must be promoted by all means possible and the distrust of the people must be combated.

The question of providing a central research laboratory at Geneva was discussed, and it was recommended that a joint committee be created in each country, under the auspices of the Red Cross, for the study of ways and means of protecting the general population.

Death of Dr. Eugene Hertoghe

The death of Dr. Eugene Hertoghe is announced from Antwerp. He was one of the most active members of the Royal Academy of Medicine. He was one of the first in Belgium to study the endocrine glands from the clinical point of view, and particularly hypothyroidism. He translated Bainbridge's work on cancer.

Cancer in Belgium

Before the Royal Academy of Medicine, Dr. Mayer discussed recently a series of statistics on the frequency of cancer. The general mortality from cancer is increasing in practically every country, and especially in Belgium. The mortality figures for cancer not controlled by necropsy are doubtless much higher than reported. The hospital services of most countries announce an annually increasing number of patients affected with cancer. It is impossible to determine whether the increase in the number of persons affected with cancer is real or whether it is due simply to the fact that

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the education of the public and the improvements in medical technic cause cancerous lesions to be recognized more frequently in subjects who formerly had no recourse to physicians and who died from intercurrent diseases. The number of persons affected with cancerous lesions is, in all countries, about the same as the number of persons affected with tuberculosis. M. Lucien Beco of Liége opposes the conclusions of Dr. Mayer and holds that the number of cases of cancer in Belgium has not increased during the past thirty-five years.

ITALY

(From Our Regular Correspondent)

Feb. 29, 1928.

Professor Morpurgo Honored

Special honors were conferred on Prof. Benedetto Morpurgo, the incumbent of the chair of general pathology at the University of Turin, on the occasion of his completing thirty-five years of instruction. Two memorial volumes containing scientific articles by eminent Italian and foreign scientists were published to commemorate the event. Professor Morpurgo is widely known for his researches on the laws regulating the renewal of the cells of the organism; on the structural metamorphoses that occur in the various tissues during inanition, and on the phenomena resulting from the extirpation of the cervical sympathetic.

Lectures Given by Italian Scientists in Foreign Countries

Professor Belfanti, director of the Serotherapeutic Institute in Milan, delivered recently an address before the microbiologic society in Vienna on "The Lipoids in Relation to the Proteins and to Immunity."

Signora Anna Celli, the widow and former collaborator of Prof. Angelo Celli, delivered at Berlin, in the auditorium of the Berlin medical society, an address on malaria. After the address, the film "Malaria," prepared by Professor Gosio, was projected.

The People's Institute

A people's institute has recently been established in Rome. Its purpose will be, among other things, to spread among laborers a knowledge of modern hygiene and prophylaxis and the needs for the protection of the physical integrity of the race.

The New Quarters of the Infant Welfare Center "Brefotropio"

Toward the end of January were dedicated the new quarters of the Brefotropio Provinciale in Rome, which includes the school of child care and training, a new isolation department, an ambulatorium, two infirmaries, a department of roentgenology and physical therapy, baths, rooms for the nursing of infants, and dormitories for the children, nurses and assistants.

The Fight Against Flies

The prime minister has recently published the draft of a law containing regulations with regard to the combating of flies. Mussolini proposes that the minister of the interior shall have control of the matter, and that in large centers of population, sanatoriums, hospitals, establishments for the production of food substances, and all places where animals are kept, shall be subject to especially severe regulations.

Rice Day

At the instance of the syndicate of physicians, and with a view to promoting the use of rice among the population of southern Italy, February 19 was set apart as "rice day." Professor Devoto of the Clinica del Lavoro in Milan gave a special lecture on the uses of rice, at a gathering of the health officers and the parish priests. The restaurants, boarding houses and dining cars were urged to serve, on that day, rice soup and a rice dessert. A large amount of propaganda literature was distributed among the people, and also the radio stations and the motion picture houses assisted in the campaign. Some 40,000 rations of rice were distributed gratuitously by the hospitals, sanatoriums and charitable institutions.

Convention of Women Physicians

The International Association of Women Doctors of Medicine and Surgery will hold in Bologna, April 11, a council session, at which twenty-two nations will be represented. A convention will be held at which the following topics will be discussed: (1) medical aid and protection of children and juveniles, as found in various countries, and (2) diseases of the eyes in relation to general medicine.

Activities of the Society for the Promotion of Maternal and Infant Welfare

During 1927, the Opera nazionale per la protezione della maternità e della infanzia granted aid to 428 institutions, which necessitated an expenditure of 5,500,000 liras. The number of vacation colonies supported was 696; the number of children provided for at seaside and mountain resorts was 139,960, while 40,000 children were given sun treatment in suburban camps. Special courses in child rearing and training for physicians were organized, at which 420 physicians were enrolled; also similar courses for midwives, with an enrolment of 322. Short courses were provided for medical directors (659 enrolled), and for sanitary assistants in maternal and infant hygiene (300 enrolled).

BERLIN

(From Our Regular Correspondent)

March 24, 1928.

Hereditary Transmission in Relation to Eugenics

Before the newly founded Bund für Volksaufartung und Erbkunde, Prof. Dr. Erwin Baur, director of the Institut für Vererbungsforschung, discussed recently the subject of hereditary transmission in relation to eugenics. Whereas in the animal kingdom the selection of breeding stock causes all variants with a low degree of viability to be eliminated, in the case of humankind many variants, owing to the fostering hand of an advanced civilization, have been preserved. This is not necessarily a detriment, but it may become such under certain circumstances; especially if, concomitant with the development of higher stages of culture, propagation of the race declines. A mortality loss of 20 per thousand must be taken into account. This loss must be at least made good by the new births. While in 1870 the birth rate was 39.1 per thousand, in 1926 it had fallen in Germany to 19.5, and conditions in France and England are very similar. In 1923 the birth rate for Berlin was only 9.4, so that Berlin would eventually die out if it received no accretions from without. The decline in the birth rate is beginning to manifest itself also in the rural sections. Conditions are not the same everywhere, for the negroes and the Indians are increasing at an extraordinary rate. Whereas in southern Africa the Boers have a birth rate of 25.7, the negroes have a rate of 50.6, which means that southern Africa will in a short time again be black, for Europe is no longer in a position to send out vast hordes of emigrants. The birth rate is declining most in the countries in which are the types having the best hereditary endowment. There are at most only 1½ children, on an average, in the families of the leading men of the country. It is as if a farmer kept back the worst grain for seeding and took the good grain to the mill. The same devastating process has frequently gone on in the history of the world. It was observed in antiquity among the Greeks and the Romans. It is now observable in all civilized countries except China. A reasonable regulation of the number

of offspring is in itself unobjectionable, but one must not overshoot the mark, and if we are to control this evil condition we must do away with the cause. We must see to it that those who rear large families (more than four children) do not suffer from the economic standpoint, by adjusting salaries according to the number of children. Some beginnings in this direction may be found in attempts to regulate the salaries of government clerks. A clerk belonging to the salary group 3, with four children, draws an income 56 per cent higher than a man without children occupying the same rank. But what shall we say when we note that the excess income in the higher salaried ranks is reduced to 8 and even 5 per cent? Likewise, the laws pertaining to legacies should provide for preferential treatment of large families of children. Care must be taken also lest through tax laws special burdens rest on married taxpayers. As the laws stand today, it often happens that a young man and a young woman while still single each belong to a lower tax-paying class, but if they marry they enter a higher tax-paying class, owing to their combined income; in other words they are penalized for marrying. Also the number of children in a family receives scant consideration in the matter of tax regulation. It is evident that the persons who attend to the regulation of such matters have not had any biologic training. It is rare to find a minister of finance who has any insight into the need of adjusting the tax load to meet the changing family conditions. It is an entirely wrong view to assume that the decline in the birth rate can be stayed by back-to-the-country propaganda. The only thing that will help is to favor large families by preferential legislation. Our situation is not yet so hopeless, however, as depicted by some modern writers; for example, Spengler, in his "The Decadence of the Occident." It is only hopeless if we fail to take action. The next fifty years will decide the fate of the nations of Europe.

Prof. Dr. Eugen Fischer, director of the Kaiser Wilhelm Institut für Anthropologie, menschliche Erblehre und Eugenik, viewed the subject from different angles. He gave a brief survey of the operation of the mendelian laws, and the laws governing the crossing of races. If a red pea has been produced by the crossing of a red and a white one, the white is still contained in the red pea thus produced, although, for the time being, it is making no use of the white. The red is dominant; the white is recessive; and if, in the crossing of two races, the dark color of the skin, for example, prevails or is dominant, the recessive white color of the skin will again reappear in the later generations. The assertion that, in some cases, a strong race engulfs, as it were, a weaker race is erroneous, and we must not fail to consider in hereditary transmission the recessive endowments just described, for they will immediately assert themselves if two marriage partners meet in both of whom the good (or the bad) endowments exist quiescent. Marriage of blood relatives is not harmful per se; there is always the chance that good or bad endowments will develop prominently, and for that reason such a marriage is an experiment that should not be considered unless it is justified by a thorough knowledge of the ancestral traits of both families represented. The question as to the hereditary transmission of mental endowments must be answered absolutely in the affirmative. It goes without saying that the inherited mental endowment is not everything, but it is the basis or substratum of later eventualities that must be brought out by the proper environment and education. Since, then, it has been distinctly recognized that there are lines of family descent, it is a terrible thought that it is possible for such lines, through neglect or otherwise, to be lost, for we all have either a written or an unwritten genealogy; we all have the same number of ancestors, and we are all blood relatives of one another. We must see to it that those who are of good stock, biologically speaking, have better opportunities for propagating than those of inferior stock. If a laborer succeeds in giving his children a good education, is it not then exceedingly regrettable if the very next generation, for the reason that it has come up, is not in a position to propagate? The advances of medicine, and the spread of sport activities, are an aid to a few. They help to improve the quality of the house, but the number of children and the hereditary qualities that they possess are the decisive factors.

The Effects of Sport Activities on the Heart

The effects of participation in sport activities on the heart have been zealously studied by those medical experts who have specialized in "sport medicine," though it cannot be said that as yet uniform and unequivocal results have been secured. That heart changes are produced by participation in various sports is unquestionably true; but opinions differ as to whether they may or may not be harmful. Dr. Karl Eimer, in an article in the *Deutsche medizinische Wochenschrift*, discusses some of the most recent researches in this field, which bring out some remarkable and noteworthy observations. His point of departure is the fully established fact that, after a single bodily endeavor, the heart, as a rule, is not distended, as might be expected, but contracted. It is remarkable that the heart adapts itself to suddenly increased demands on it by diminution of the output, while the number of pulse beats is increased at the same time. The diminution of the output persists for some time after the performance, even though the pulse beat and the blood pressure have become normal. The contraction of the heart associated with a single bodily performance is only transient, and only in exceedingly rare cases does it have any permanent effects. But what is the effect on the heart of an excess bodily task continued over a period of years? Those animals which execute great muscular performances, for example the deer, the race horse and swiftly flying birds, have especially large hearts. In the hare, for example, the heart is almost three times as heavy as in the caged rabbit. This principle that, the greater the tasks performed, the larger the heart is, appears to apply to man as well. The marked effect of military service on the size of the heart has been noted. Eimer examined the hearts of the contestants in the Olympic games held in 1924 in Marburg and compared them with the hearts of normal Marburg students. He found that the healthy hearts of students aged 18 to 23, even after several months' training and following remarkable bodily performances, showed no essential change in size. On the other hand, in the hearts of the older students, the effects of many years' participation in sport activities could be discerned in the form of a broadening of the heart transversals. As the result of long-continued, repeated excess demands on the heart, a moderate enlargement of the heart shadow can be expected, but it is not yet established whether this enlargement injures the heart.

Marriages

MAUDE WINNIFRED TAYLOR to Mr. George Tibbals Griswold, both of Hartford, Conn., April 14.

GENTZ K. PERRY, Rhinelander, Wis., to Miss Esther C. Johnson of Evanston, Ill., March 3.

JOSEPH WILLIAM LARIMORE, St. Louis, to Miss Ruth Evans of Fort Valley, Ga., March 1.

SAMUEL ADELSON, Newport, R. I., to Miss Mildred Taber of Providence, March 27.

MARTIN A. HOWARD to Miss Mary Skinner, both of Portland, Ore., March 31.

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Deaths

James Elmore Logan ✠ Kansas City, Mo.; University Medical College of Kansas City, 1883; Bellevue Hospital Medical College, New York, 1884; formerly president of the faculty and board of trustees and professor of diseases of the nose and throat and clinical otology, University Medical College of Kansas City; member of the American Otological Society and past president of the American Laryngological Association and the American Laryngological, Rhinological and Otological Society; on the staff of the Kansas City General Hospital; aged 66; died, March 24, of chronic cardiovascular disease.

Augustus Washington Shea ✠ Nashua, N. H.; University of Vermont College of Medicine, Burlington, 1887; member of the New England Surgical Society; served during the World War; formerly on the staffs of the Nashua Memorial and St. Joseph's hospitals; at one time member of the city board of health and city physician; aged 62; died, April 10, at the Charlesgate Hospital, Cambridge.

George Byron Packard ✠ Denver; University of Vermont College of Medicine, Burlington, 1874; emeritus professor of orthopedics, University of Colorado School of Medicine; past president of the Colorado State Medical Society and the American Orthopedic Society; formerly president of the staff of the Children's Hospital; aged 75; died, February 23, of myocarditis.

Leight Monroe Higgins ✠ Washington, D. C.; Johns Hopkins University School of Medicine, Baltimore, 1920; member of the Medical Society of the State of North Carolina; formerly secretary of the Rowan County (N. C.) Medical Society; aged 34; died, April 7, of pneumonia following *Streptococcus viridans* septicemia.

Christopher G. Schott, Louisville, Ky.; Hospital College of Medicine, Medical Department Central University of Kentucky, Louisville, 1904; aged 51; proprietor and physician in charge of the Maple Heights Sanatorium and Hospital, where he was shot and killed, April 16, by an employee.

Andrew Newton Hollabaugh ✠ Nashville, Tenn.; Vanderbilt University School of Medicine, Nashville, 1902; professor of clinical obstetrics at his alma mater; on the staffs of the Nashville City and Vanderbilt University hospitals; aged 51; died suddenly, April 13, of angina pectoris.

Frank L. Harter, Syracuse, N. Y.; Albany Medical College, 1882; at one time instructor in clinical medicine, Syracuse University College of Medicine; formerly on the staff of the Hospital of the Good Shepherd; aged 68; died, March 30, of progressive bulbar paralysis.

Benjamin Franklin Beavers ✠ Decatur, Ind.; University of Kansas School of Medicine, Kansas City, 1921; at one time secretary of the Adams County Medical Society; formerly on the staff of the Adams County Hospital; aged 37; died suddenly, April 2, of heart disease.

William Bastian Konkle, Montoursville, Pa.; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of the State of Pennsylvania; aged 70; died, March 30, at the Williamsport (Pa.) Hospital, of meningitis following perirectal abscess.

Benjamin Morje, New York; Bellevue Hospital Medical College, New York, 1876; member of the Medical Society of the State of New York; on the staff of the Lenox Hill Hospital; aged 76; died, March 28, of cerebral hemorrhage and arteriosclerosis.

Benjamin Walrond Howell ✠ Mount Vernon, N. Y.; University and Bellevue Hospital Medical College, New York, 1917; on the staffs of the Bikur Cholim Convalescent Home and the Mount Vernon Hospital; aged 51; died, March 31, of acute nephritis.

Edgar Loomis Holyoke, Lincoln, Neb.; Rush Medical College, Chicago, 1885; formerly associate professor of the practice of medicine and clinical medicine, Nebraska College of Medicine; aged 71; died, April 3, of angina pectoris and arteriosclerosis.

Thomas Forest Whiteside ✠ Timpson, Texas; Barnes Medical College, St. Louis, 1897; member of the Louisiana State Medical Association; aged 53; part owner of the Whiteside-Johnson Hospital, where he died, March 30, of heart disease.

Robert Smart, San Diego, Calif.; Georgetown University School of Medicine, Washington, D. C., 1896; served during the World War; formerly member of the city board of health; aged 56; died, April 7, at the County Hospital of heart disease.

William Arthur Massey Hadley, Springfield, Ohio; Homeopathic Hospital College, Cleveland, 1889; member of the Ohio State Medical Association; formerly on the staff of the Springfield City Hospital; aged 61; died, April 6, of pneumonia.

Daniel H. Simmons ✠ De Funiak Springs, Fla.; University of Alabama School of Medicine, Tuscaloosa, 1895; formerly secretary of the Walton County Medical Society; aged 65; died, Dec. 16, 1927, of chronic myocarditis and interstitial nephritis.

Douglas Graham, Boston; Jefferson Medical College of Philadelphia, 1873; member of the Massachusetts Medical Society; aged 79; died, March 24, at his home in Brookline, Mass., of arteriosclerosis, hypertension and pneumonia.

Henry A. Barber, Lenexa, Kan.; Eclectic Medical Institute, Cincinnati, 1868; formerly professor of obstetrics, Kansas City (Mo.) Hahnemann Medical College; Civil War veteran; aged 80; died, April 4, of carcinoma of the liver.

Robert Kemp Jefferson ✠ Federalsburg, Md.; University of Maryland School of Medicine, Baltimore, 1890; formerly on the staff of the Cambridge-Maryland Hospital, Cambridge; aged 59; died, January 3, of angina pectoris.

Daniel A. Iliff, Muskogee, Okla.; College of Physicians and Surgeons, Medical Department Kansas City University, Kansas City, Kan., 1901; member of the Kansas Medical Society; aged 72; died, March 25, of myocarditis.

Ransom D. Palmer ✠ Carson, Ala.; Medical Department of the Tulane University of Louisiana, 1886; past president of the Washington County Medical Society; aged 64; died, March 25, at the home of his daughter in Jackson.

Thomas Allyn Capen, Fall River, Mass.; Hahnemann Medical College of Philadelphia, 1872; aged 82; died, March 27, at the Fall River General Hospital, of shock, following an operation for prostatic obstruction.

Edward J. Smith, Brooklyn; Bellevue Hospital Medical College, New York, 1889; member of the Medical Society of the State of New York; on the staff of the Swedish Hospital; aged 59; died, April 7, of pneumonia.

Barnabas Richard Carroll, Newberry, S. C.; Meharry Medical College, Nashville, Tenn., 1925; aged 36; died, April 4, at the Good Samaritain Hospital, Columbia, of uremia and cardiorenal disease.

John Bernard Shannon, Cincinnati; Eclectic Medical College, Cincinnati, 1925; served during the World War; aged 31; died, April 1, as the result of injuries received in an automobile accident last August.

William Joseph O'Brien, Brooklyn; Medical Department of the University of the City of New York; 1893; formerly on the staff of St. Catherine's Hospital; aged 49; died suddenly, April 3, of heart disease.

Thomas Joseph Dean ✠ Union Springs, Ala.; Louisville (Ky.) Medical College, 1894; formerly secretary of the Bullock County Medical Society; aged 58; died, March 22, of chronic interstitial nephritis.

William Reisert ✠ Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1889; aged 65; died, April 9, at the Pennsylvania Hospital, of arteriosclerosis, cystitis and heart disease.

Albert Jay Abeel ✠ Syracuse, N. Y.; Syracuse University College of Medicine, 1897; member of the American Roentgen Ray Society; also a minister; aged 69; died, March 14, of cerebral hemorrhage.

James Joseph Barry, Owensville, Mo.; Medical Department of Washington University, St. Louis, 1908; aged 42; was found dead, April 5, of shock, following an automobile accident.

Henry A. Schoaff, Peoria, Ill.; Keokuk (Ia.) Medical College, 1898; member of the Illinois State Medical Society; aged 67; died, April 4, at Rochester, Minn., of tuberculous nephritis.

Joseph Henry Parker, Dendron, Va.; Medical College of Virginia, Richmond, 1904; member of the Medical Society of Virginia; member of the school board; aged 53; died, March 29.

Nathaniel S. Smith, Chincoteague Island, Va.; University of Maryland School of Medicine, Baltimore, 1864; Civil War veteran; aged 86; died, April 3, of chronic valvular heart disease.

Henry Meadows, Denman Island, B. C., Canada; University of Edinburgh, Scotland, 1871; aged 79; died, March 2, at the Provincial Home for Incurables of British Columbia, Marpole.

Louis A. Podolski ✠ Atlantic City, N. J.; University of Pennsylvania School of Medicine, Philadelphia, 1894; aged 69; died, Dec. 25, 1927, at Philadelphia, of angina pectoris.

George W. Miller, Greensburg, Pa.; Jefferson Medical College of Philadelphia, 1884; member of the Medical Society of the State of Pennsylvania; aged 69; died, Dec. 22, 1927.

Clarence David Edgar, Jr., Forest Hill, La.; Tulane University of Louisiana School of Medicine, New Orleans, 1926; aged 26; died, Dec. 22, 1927, of tuberculosis.

Charles August Erickson ✠ Chicago; Northwestern University School of Medicine, Chicago, 1903; aged 51; died, at Albuquerque, N. M., April 3, of tuberculosis.

Oscar McClennan Myers, Rochester, N. Y.; University of Pennsylvania School of Medicine, Philadelphia, 1888; aged 63; died, March 18, of chronic nephritis.

John M. Crook, Columbus, Ga.; College of Physicians and Surgeons, Baltimore, 1885; aged 80; died, March 28, at Jacksonville, Ala., of bronchopneumonia.

William Wesley Boyd, West Point, Miss.; Vanderbilt University School of Medicine, Nashville, Tenn., 1881; aged 74; died, February 28, of arteriosclerosis.

Walter Newton Moore ✠ Lisman, Ala.; Louisville (Ky.) Medical College, 1903; aged 53; died, April 5, at a hospital in Meridian, Miss., of septicemia.

Luther Clark Toney, Madera, Chihuahua, Mexico; Bellevue Hospital Medical College, New York, 1882; aged 69; died, Dec. 28, 1927, of pneumonia.

Peter W. Tiernan, Providence, R. I.; Baltimore Medical College, 1902; aged 57; died, April 5, of chronic nephritis, bronchitis and myocarditis.

Benedict George Bassler ✠ Dubuque, Iowa; St. Louis College of Physicians and Surgeons, 1901; aged 54; died, March 28, of coronary thrombosis.

Edwin A. Smith, East Cleveland, Ohio; Homeopathic Hospital College, Cleveland, 1888; aged 66; died, February 25, of intestinal obstruction.

Julia F. Haywood, Rochester, N. Y.; Homeopathic Medical College of Missouri, St. Louis, 1881; aged 70; died, March 23, of heart disease.

Vincent Charles Derham ✠ San Francisco; Cooper Medical College, San Francisco, 1909; aged 41; died, April 6, of coronary occlusion.

Paul A. Neal, Westpoint, Tenn.; Vanderbilt University School of Medicine, Nashville, 1886; aged 65; died, Nov. 18, 1927, of myocarditis.

Michael Elijah Shriver ✠ Cumberland, Iowa; Creighton University School of Medicine, Omaha, 1907; aged 54; died, March 17, of carcinoma.

Meyer Jay Lippe ✠ St. Louis; Missouri Medical College, St. Louis, 1895; aged 53; died, March 22, of angina pectoris and cholelithiasis.

Henry Comstock Hazen, New York; Columbia University College of Physicians and Surgeons, New York, 1891; aged 60; died, April 10.

William A. Swan, Kansas City, Mo.; Eclectic Medical University, Kansas City, 1913; aged 45; died, January 25, of myocarditis.

Edwin Theodore Rollins ✠ Boston; Harvard University Medical School, Boston, 1902; aged 60; died, March 30, of carcinoma.

Samuel S. Hazzard, Wichita, Kan. (licensed, Kansas, 1901); aged 78; died suddenly, March 31, of cerebral hemorrhage.

Caleb E. Martin, Buckley, Wash. (licensed, Washington, 1895); aged 55; died, February 28, of pulmonary tuberculosis.

James S. Stidham, Campbell, Texas; Atlanta (Ga.) Medical College, 1881; aged 77; died, March 30, of uremia.

Harry E. Scott ✠ Argyle, Wis.; Rush Medical College, Chicago, 1900; aged 50; died, March 29.

Bureau of Investigation

AL-14

Citric Acid and Bicarbonates as a Cure for "Colds" and "Flu"

A widely advertised "patent medicine," "Formula AL-14," is marketed by the American Chemical Company of Pittsburgh, Pennsylvania, which was previously known as the Research Laboratories of Pittsburgh. The American Chemical Company has exploited three products: "RA-3," "RA-9" and "AL-14."

The first of this group of nostrums to be put on the market was RA-3 and it was, apparently, sold wholly through the United States mails. Letters were sent on the stationery of the Research Laboratories of Pittsburgh to prospective "suckers"—usually men over forty. One letter was from H. M. Spaulding, who declared that he was an attorney and a member of the bar, who had found the solution of his "habitual mental exhaustion." The usual "patent medicine" story followed: Mr. Spaulding had felt that he was "slipping"; he consulted physicians and visited sanatoriums and health resorts to no avail; then he heard of RA-3, which he used with the usual miraculous results. Mr. Spaulding

DIET FOR COLDS

Until a cold or "flu" has been cured, eliminate from your diet sugars and pastries, and reduce the amount of starch. Green vegetables, fruit and buttermilk are the most helpful foods.

DOSAGE

If a cold be treated in its inception, one or two doses of AL-14 will ordinarily be sufficient, but in very severe cases, four to eight doses may be required.

Doses of AL-14 should be taken from half an hour to an hour apart. In very severe cases, take four doses half an hour apart, then one dose an hour.

We can make this statement without exaggeration: It is hardly possible that even the severest type of cold of long standing can not be cured with ten doses of AL-14. The necessity of taking such a dosage, however, is very rare.

For "Flu" continue doses one hour apart until two or three hours be taken if necessary. **AL-14 will do the work if instructions be followed.**

AL-14 is an insurance against Pneumonia, "Flu" and Colds. It should be in your home always during the winter months.

AL-14 is extremely pleasant to take.

Price $2.00

AMERICAN CHEMICAL CO.
EMPIRE BUILDING
PITTSBURGH PENNSYLVANIA

Colds—"Flu"

Their Cause
AND
Their Cure

The record which AL-14 has established for curing colds is about 97% of the cases in a few hours. AL-14 is not a medicine. It contains only those salts which are needed in the body so that in addition to curing the cold, there is a real benefit to the body by taking AL 14.

in his letter threw out hints of the marvelous aphrodisiac effects of RA-3.

Another letter was sent out at the same time by John R. Willis, director of the Research Laboratories of Pittsburgh. Mr. Willis, in detailing the aphrodisiacal marvels of RA-3, was less subtle than Mr. Spaulding. Said Willis:

> "You cannot buy Formula RA-3 in the drug stores. Its powers to develop sex-strength are too great to place it where young men can get it."

And thus one of the booklets describing its wonders:

> "In one of our patients who had not enjoyed the sex relation in two years, RA-3 was able to revitalize his powers to a point equivalent to that of twenty years before."

Another booklet entitled "What Pittsburgh Men Think of RA-3" lists testimonials from bankers, architects, business men, clergymen, etc. One of the names of men who "have used RA-3 and endorse it" is given as "Morgan H. Bowman, Jr., Vice President Arrow Coal Mining Co." One wonders whether this is the same Morgan H. Bowman who is secretary and treasurer of the American Chemical Company, which exploits this "patent medicine."

In his earlier letters John R. Willis, the "Director," declared that RA-3 contained "minute quantities of radium tested by the United States Bureau of Standards." Later

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letters omitted all reference to radium and Mr. Willis described RA-3 as "containing all the important constituents of the outsides of grains and vegetables."

During the past year RA-3 seems to have been relegated to the background, as has also the product RA-9, which was said to be similar to RA-3 only for women. The promotion efforts of the American Chemical Company have for some months past been directed especially to the product AL-14, which we are told "is a compound of several of the principal alkaline salts which are contained in the body" and "are organic in form and get into the blood-stream almost immediately." AL-14, according to the advertising, "is an insurance against Colds, Flu and Pneumonia and should be in your home always." In order that some information might be obtained regarding the composition of this compound of organic salts said to be "in the exact proportion in which they are found" in normal human blood, an unopened, original package of Formula AL-14 was turned over to the A. M. A. Chemical Laboratory for analysis. The chemists' report follows:

LABORATORY REPORT

"An original package of 'Formula AL-14' (American Chemical Co., Pittsburgh, Pa.) was submitted to the A. M. A. Chemical Laboratory for analysis. The package contained a circular and twenty-four small oiled paper envelopes, each containing between 3.3 and 4.2 grams of a white powder. Twelve envelopes carried directions printed in red and the other twelve carried directions printed in blue. The envelopes printed in red directed:

> "Empty the contents of this package and contents of one blue package into glass. Draw water on slowly as there is free effervescence. A full glass of water should be taken either with AL-14 or immediately afterward."

"AL-14 is to be taken for 'colds' and 'flu.' A circular contained in the box gave the following instructions for the treatment of 'flu':

> "For Flu, after the first box has been taken at about one hour intervals, begin, if necessary, on a second box at two or three hour intervals."

"These instructions are somewhat vague, but a total of eighteen of the above doses may be taken in twenty-four hours. The circular bore the only clue as to the identity of the constituents of Formula AL-14. It contained the statement:

> "Formula AL-14 is a compound of several of the alkaline salts which are contained in the body."

"The printed matter on the package, among other statements, contained the following:

> "If the material contained in Formula AL-14 were in the body in proper proportion, the Cold and Flu Bacteria could not attack the body."

"The envelopes with blue printing contained an average of 3.93 Gm. of a white powder. Qualitative chemical tests and a spectroscopic examination indicated the presence of calcium (Ca^{++}), lithium (Li^{+}), potassium (K^{+}), sodium (Na^{+}) and carbonate (CO_3^{--}). Quantitative determinations indicated the presence of only traces of lithium. Other quantitative determinations were as follows:

Moisture	0.01 per cent
Calcium	0.27 per cent
Potassium	15.34 per cent

"In addition, total alkalinity and total combined sulphates were determined. Calculations from the foregoing analysis yielded the following:

Calcium carbonate ($CaCO_3$)	0.6 per cent
Potassium bicarbonate ($KHCO_3$)	39.2 per cent
Sodium bicarbonate ($NaHCO_3$)	60.1 per cent

"The envelopes with red printing contained an average of 3.66 Gm. of a white crystalline material. Qualitative tests indicated the presence of citric acid. Titration of the material according to the U. S. P. X. method indicated the presence of 100.30 per cent Citric Acid U. S. P. X. There was no weighable ash.

"From this analysis it is evident that one dose of AL-14 would be equivalent to 2.4 Gm. (37 gr.) sodium citrate, 1.6 Gm. (24 gr.) potassium citrate, 0.04 Gm. (0.6 gr.) calcium citrate, 0.6 Gm. (9 gr.) citric acid and a trace of a lithium salt. The amount to be taken in twenty-four hours is not definitely stated, but may be as much as eighteen times the single dose. This would be equivalent to 43 Gm. (665 gr.) sodium citrate, 29 Gm. (430 gr.) potassium citrate, 0.72 Gm. (10.8 gr.) calcium citrate, 10.8 Gm. (162 gr.) citric acid and a trace of a lithium salt.

"From the foregoing, it is concluded that Formula AL-14 is a compound effervescing powder composed of (*a*) citric acid and (*b*) bicarbonates. On mixing these effervescence takes place, yielding a solution having as its essential constituents citrates of potassium and sodium, together with a trace of a calcium salt and a small amount of unneutralized citric acid."

From the chemists' analysis, it appears, then, that AL-14, described as a compound of the principal alkaline salts found in the body, is a mixture of citric acid, baking soda and potassium bicarbonate—in round figures, 1½ ounces of citric acid, 1 ounce of baking soda and ½ ounce of potassium bicarbonate. For this simple mixture, which certainly cannot cost the manufacturers more than 10 cents, $2 is charged, which, it must be admitted, allows a liberal margin of profit for exploitation and interest on the investment.

Correspondence

TARDY HONORS TO AESCULAPIUS

To the Editor:—It recently came to my attention that the worthy patron of medicine, Aesculapius, by some strange oversight, failed to have his name given to any celestial object, although he was promised a place among the stars by Zeus, yielding to the request of Apollo. Accordingly, my colleague, Prof. George Van Biesbroeck of this observatory, discoverer of some unnamed asteroids, has accepted my suggestion and we have christened number 1027 of the large family of asteroids with the name Aesculapius.

This object circulates between the orbits of Mars and Jupiter, at an average distance of 294 million miles from the sun, in a period of 5.62 years. At the nearest point of its orbit to that of the earth, its distance is 163 million miles from us and it is of the fourteenth magnitude.

Doctors wishing to consult their Patron Saint will have to use a pretty good sized telescope, and we shall be glad to be of any assistance.

EDWIN B. FROST, Williams Bay, Wis.
Director, Yerkes Observatory of
the University of Chicago.

"METALS IN OUR FOOD"

To the Editor:—The article by Flinn and Inouye (THE JOURNAL, March 31, p. 1010) entitled "Metals in Our Food" is praiseworthy up to the point of apparently exculpating copper, zinc and aluminum as industrial poisons.

I quote from the summary of the article (with one intervening paragraph omitted):

> Copper, zinc, aluminum and nickel are not classified as industrial poisons because of the absence of any evidence of chronic or acute poisoning in industrial plants. Nickel poisoning has been reported from nickel carbonyl. Tin apparently does not affect the human system, but because of its cost its use in cooking utensils is prohibitive.

In the same mail that brought this article came a copy of a record of the compensable occupational diseases under the Industrial Commission of Ohio, for a two and one-half year period, ending Dec. 31, 1927. I note therein a mention of seventeen cases of systemic zinc poisoning, with eleven others attributed to brass, which is an alloy of zinc and copper, and forty cases of nonsystemic disease attributed to brass, including bronze, zinc and copper. Bronze is an alloy of copper and tin, but may contain zinc. Two cases of industrial copper poisoning were cited as existing, but noncompensable under the Ohio law.

Published reports emanating from other states providing occupational disease compensation indicate a similar incidence for diseases of this character.

CAREY P. MCCORD, M.D., Cincinnati.

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

EFFECTS OF REPEATED USE OF ETHYL CHLORIDE

To the Editor:—A woman, about eighteen months ago, was treated for a functional nervous disorder by attempted hypnotism. The hypnotist failed to secure complete hypnosis, but gave her relief by means of inhalations of ethyl chloride. The inhalations were continued. I have been unable to observe any ill effects, but I shall be appreciative if you could tell me what bad effects, if any, could follow. M.D., California.

ANSWER.—One would have to consider two dangers: one, from excessive concentration of ethyl chloride resulting from careless administration which might produce sudden heart paralysis; the other, from the gradual undermining of mental and physical health, effects that ethyl chloride has, no doubt, in common with narcotics of the aliphatic series of hydrocarbons, such as alcohol, ether and chloroform.

MAXILLARY FRACTURES

To the Editor:—Could you furnish me with references to the latest literature on treatment of lower maxillary fractures? What plaster-of-paris appliances are most in favor when surgical treatment is not indicated?

O. L. A., M.D., Mexico City.

ANSWER.—Fractures of the body of the mandible are treated preferably by splinting with a band arch or by wiring the teeth in occlusion. A downward displacement of one fragment may be corrected by applying a wire splint to both upper and lower teeth by fine wire around them. The two splints are pulled together by means of ordinary elastic bands. The displaced fragment may even be slightly overcorrected by placing a small wedge between the teeth of the adjacent portion of the jaw.

After the correction of any displacement, a band arch may be applied to splint the fragments of the mandible together, such as orthodontists use. The piece of heavy wire splint is held to the teeth by dental bands cemented on the teeth. This permits the patient to use his jaw for eating until union has occurred in from four to six weeks.

If the fracture occurs behind the teeth or if some of the teeth are absent, the teeth should be wired in occlusion. This necessitates a liquid diet.

There is no satisfactory treatment by plaster-of-paris appliances.

The following references are of interest:

Entwisle, R. M., and Gardner, I. A.: Fractures of the Mandible, *Atlantic M. J.* **28**: 515 (May) 1925.

Pickerill, H. P.: Treatment of Fractured Mandible Accompanying Gunshot Wounds, *Brit. M. J.* **2**: 105 (July 22) 1916.

Scudder: The Treatment of Fractures, ed. 9, Philadelphia, W. B. Saunders Company, 1922.

DIAGNOSIS AND TREATMENT OF SKIN DISEASE RESEMBLING DERMATITIS HERPETIFORMIS

To the Editor:—A white man, aged 36, height 6 feet 1 inch (185.4 cm.), weight 200 pounds (90.7 Kg.), has a recurrent pustular eruption affecting principally the face, neck, hands and lower part of the arms. Occasionally the attacks show over the entire body, in which event general malaise is complained of, as well as the intense itching which ordinarily accompanies the eruption. The pustules appear deep in the skin and give somewhat the feeling of the "shotty" effect in early smallpox, later rising above the surface, the serum changing from a slightly milky serum to a yellowish pus. The incision of the pustules relieves symptoms. Tonsillectomy a year ago, followed by dental work, removing two or three apical abscesses, gave respite to the symptoms for more than six months.

The patient had a very severe illness at the age of 6 weeks. The temperature was 105 or 106 for some time, following which he suffered complete onychia, alopecia, and general desquamation of the skin. This illness was supposed to have been an intestinal disorder due to food disturbance, and after several changes in diet he progressed favorably and showed no illness at all until about three years ago, when this eruption started. The initial onset occurred in South America, in the tropical area, about three months after his arrival in the tropics. He had been a heavy alcoholic drinker but had not suffered other disturbances from alcoholism, and has since stopped its use and shows no organic symptoms attributable to alcohol. In fact, he seems particularly healthy and well developed except for the cutaneous manifestation.

The Wassermann reaction is negative, as well as the provocative Wassermann, and intravenous injection of 0.75 Gm. of neoarsphenamine, the second injection forty-eight hours after the first, had no apparent effect on the eruption, which was at its acme, but subsequent use of solution of potassium arsenite did relieve the symptoms and keep them in abeyance.

As far as I have been able to check, he does not show protein sensitization or dietary idiosyncrasies. He is not troubled with constipation and has no abdominal disorders, and the stools have been checked for parasites with negative results.

I made a diagnosis of pemphigus, probably from a focus of infection. I will appreciate it very much if from the data outlined you can give me any information as to diagnosis, or treatment.

RALPH J. MALOTT, M.D., Salt Creek, Wyo.

ANSWER.—Attacks of a pustular eruption with intense itching, occurring at intervals for three years, relieved temporarily by clearing up foci in the teeth and tonsils and by solution of potassium arsenite, are suggestive of dermatitis herpetiformis, a near relative of pemphigus. The treatment is difficult and requires great patience on the part of the physician and the patient. The disease often slowly clears up or wears itself out; but the pustular form is one of the most intractable and sometimes ends fatally.

The treatment first of all calls for measures to maintain good health, especially of the nervous system. Plenty of nourishing food, plenty of sleep, little excitement, not too much or too strenuous work, and a fair amount of recreation are important. Preparations such as iron, quinine and strychnine may be given, or cod liver oil, or bromides to reduce nervousness and itching. Autoserum injections often clear up the eruption for a time, from 30 to 100 cc. of the patient's own serum injected intramuscularly. From five to ten of these injections may be given at five-day intervals. Bleeding alone may be helpful. Sulphur baths are useful to relieve itching, 120 Gm. of potassa sulphurata U. S. P. or liquor calcis sulphuratae N. F. to a bath of 120 liters of water. A sponge bath may be taken with a stronger solution of the same preparations, or with liquor picis carbonis N. F., 10 per cent or stronger, in water or dilute alcohol.

Ultraviolet ray treatments are beneficial in two ways, by the tonic effect of general exposures, and by a directly curative effect of actinic reaction on the patches of the disease. This is most helpful in the cases in which the eruption recurs in the same spots.

POSSIBILITY OF ALBUMINURIA AFTER MERCUROCHROME

To the Editor:—Have you in your records any instances of albuminuria produced by the use of 2 to 5 per cent solutions of mercurochrome as a daily irrigation? D. D. MONROE, M.D., Edwardsville, Ill.

ANSWER.—Dr. Hugh Young states that his clinic has not employed mercurochrome (merchurochrome-220 soluble) for daily irrigation in 2 or 5 per cent solutions, and has no records of others having done so. Mercurochrome in a strength of 1:1,000 is promptly germicidal against both bacilli and cocci under the conditions in which it would be employed for irrigations. It is entirely unnecessary, therefore, to use a solution of 2 or 5 per cent for this purpose. At the Brady Urological Institute, where the drug was first studied, it is never empolyed in the urethra or bladder in a solution stronger than 0.5 per cent, and for vesical irrigations usually a strength of 1:1,000 is used. For posterior injections, either with or without a catheter, from 0.5 to 0.2 per cent solution is the strength usually employed. More than 10,000 injections of 0.5 per cent mercurochrome have been given into the deep urethra and bladder and a case of albuminuria has not yet been recorded as resulting therefrom.

Mercurochrome contains about 26 per cent of mercury, and, if it is used in large amounts and in strong solutions in regions which are not promptly drained away, it is quite easy to get sufficient absorption to produce mild mercurialism, as evidenced by transient albuminuria. It is probable that, if daily injections of a 5 per cent solution were used and were allowed to remain in a bladder which does not empty itself completely, there might be sufficient absorption from the posterior urethra and bladder to produce transient albuminuria. It should not be employed in such strength for irrigations, nor should it be used in such concentration where drainage is not free. It may be noted, however, that, in the treatment of gonorrhea in women, Mayes (*New York State J. Med.* **26**:384 [May 1] 1926) employs local application of 4 per cent mercurochrome in the vagina, and Brady (*Bull. Johns Hopkins Hosp.* **37**:400 [Dec.] 1925) uses 20 per cent in the cervix without any evidence of mercurialism.

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The experience in Young's service with many hundreds of intravenous injections of mercurochrome shows that it may rarely produce transient albuminuria. In a study of more than 500 cases, a definite case of nephritis or a persistent albuminuria produced by intravenous mercurochrome has not been noted even when large doses were employed. It is believed now that the dose for intravenous injection originally advised (5 mg. per kilogram, or 23 cc. of a 1 per cent solution per hundred pounds of body weight) was much stronger than necessary and that such doses need be used only in those desperate cases of septicemia or of other infections in which the patient may die within a day or two and it is important to employ effective treatment immediately. Dr. Young now usually begins with a dose of 2 mg. per kilogram, or about 10 cc. of a 1 per cent solution per hundred pounds of body weight. This dosage is gradually increased about 3 cc. each time, the interval between injections varying from two to four or five days. Great care is taken to avoid pronounced reactions, febrile, intestinal or gingival. Of course, the urine should be examined before and after drug administration, but studies show that when mercurochrome is used in this way even transitory albuminuria is extremely rare.

In gonococcal infections mercurochrome is used both locally and intravenously, starting with weak solutions, a 1:500 dilution usually being employed for urethral or bladder irrigations and 2 mg. per kilogram intravenously. With this combined therapy the gonococci in the urethra are reached by the local injections, while those which have penetrated into the glans, periurethral glands, prostate, seminal vesicles or epididymis are combated by the intravenous therapy. Young's experience with this combined therapy shows that the results obtained in gonorrhea were better than were obtained before. This confidence is confirmed by similar results obtained by Walther (*New Orleans M. & S. J.* **78**:804 [June] 1926), Potter and Redewill (*U. S. Nav. M. Bull.* **24**:279 [April] 1926), Williams and Small (*U. S. Nav. M. Bull.* **25**:621 [July] 1927) and others.

DOSAGE IN ROENTGENOTHERAPY

To the Editor:—In roentgenotherapy, when using 4 mm. of aluminum as filter and using a formula calling for a certain milliamperage, spark gap, time and a 10 inch distance and wishing to change to a 15 inch distance, should the time be one-half longer? Please give the approximately correct time which would be required to produce an erythema dose when using a 15 inch anode skin distance and 5 milliamperes. Please omit name.

M.D., California.

ANSWER.—Increase of the focal spot-skin distance, the other factors remaining the same, requires an increase in the time of roentgen-ray exposure according to the square of the distance; thus, an increase of 5 inches over 10 inches, specified by our correspondent, will require a practical doubling of the time or, more accurately, $T \times (\frac{15}{10})^2 = 125$ per cent increase in time.

The approximate time to produce an erythema dose will vary with each individual installation or roentgen-ray laboratory equipment. The following exposure times are correct for an erythema skin dose for a certain equipment in Chicago:

Spark Gap	Sphere Gap	Aluminum Filter	Time
8 in.	120 kilovolts	3 mm.	97 ma. min., or 19 min. @ 5 ma.
8 in.	120 kilovolts	4 mm.	125 ma. min., or 25 min. @ 5 ma.
9 in.	130 kilovolts	3 mm.	90 ma. min., or 18 min. @ 5 ma.
9 in.	130 kilovolts	4 mm.	112 ma. min., or 22 min. @ 5 ma.
10 in.	140 kilovolts	3 mm.	75 ma. min., or 15 min. @ 5 ma.
10 in.	140 kilovolts	4 mm.	105 ma. min., or 21 min. @ 5 ma.

TREATMENT OF CHANCROIDS

To the Editor:—What is the best treatment for multiple chancroids?

J. C. SPECK, M.D., Cleveland.

ANSWER.—In one technic for the local treatment of chancroids, the accessible infected area is thoroughly coagulated. This is accomplished either by the application of phenol (carbolic acid) followed by swabbing with alcohol, or by the aid of a Paquelin or a galvanocautery or the active electrode of a diathermy apparatus.

In order to propagate the softening and timely detachment of the crust produced, the coagulated spot or spots in multiple ulcers are covered with an indifferent ointment such as zinc oxide ointment. If this treatment is successful the ablation of the scab leaves a smooth, granulating surface which becomes quickly epitheliated. If the detachment of the scab shows an irregular bottom of the ulcer producing thin ichor, the coagulation should be repeated.

Persistent ulceration, especially of a spreading phagedenic character, calls for the intravenous injection of antimony and potassium tartrate.

The technic of this administration has been repeatedly described in the columns of THE JOURNAL.

RADIUM FOR LEUKEMIA

To the Editor:—What do you think of the use of radium chloride intravenously for lymphatic leukemia? Have you any suggestions to make for treating lymphatic leukemia (chronic?) Since the roentgen ray brings on a profound anemia, would it be considered an advantage or disadvantage in the long run in the treatment of the condition mentioned? Please omit name.

M.D., California.

ANSWER.—Such injections have, at best, only a temporary effect in the disease. The same is true of roentgen rays. Unfortunately, in our present state of ignorance of the pathogenesis of this disease, we can hardly do better than apply the therapy recommended by Osler: "fresh air, good diet and abstention from mental worry and care."

RECTAL ADMINISTRATION OF ARSPHENAMINE

To the Editor:—I have always believed that many drugs are tried by the "rectal way" but with little or no success. I feel that this method of administering arsphenamine would be a fine method if it were practicable. What is your report and opinion? Please omit name.

M.D., Pennsylvania.

ANSWER.—This method of administering arsphenamine or similar arsenicals has been found quite inefficient. See article by Littman and Hutton, THE JOURNAL, March 15, 1924, p. 868.

CHANGES IN REACTION OF URINE

To the Editor:—I have had a woman patient, aged 21, under observation since last spring. Urinalysis (catheterized specimen) shows pus cells and a few casts. Swelling in the feet and hands is more marked near the menstrual period or after being up from twelve to fourteen hours during the day. I have advised three or four hours' rest in bed daily and have given potassium citrate to render the urine alkaline, alternating with methenamine for acid reaction, repeating this process several times. Recently the urine has changed from acid to alkaline and vice versa without treatment. The patient has been on a low protein diet. What are possible causes of changes in reaction without treatment? Also suggest treatment, as the patient has not shown much improvement. Please omit name.

M.D., Tennessee.

ANSWER.—Changes in the reaction of the urine without medication occur quite commonly. In the case cited it may be due to the chronic cystitis, for when the condition is marked the urine usually becomes alkaline, returning to the acid reaction with slight improvement. The reaction may change from acid to alkaline on long standing in the container owing to the decomposition of urea with the formation of ammonia. Changes to alkalinity occur during digestion of full meals and after the ingestion of large quantities of fruits.

Therapeutic suggestions are dependent on a diagnosis, and more facts should be submitted, such as the condition of the circulatory apparatus; the blood pressure; detailed repeated urine examinations with especial reference to specific gravity, albumin, blood, casts, and the presence or absence of clumped leukocytes; chemical examination of the blood, including the serum albumin to serum globulin ratio; results of cystoscopy and roentgen-ray examination, and the blood picture.

TREATMENT OF AMENORRHEA

To the Editor:—A patient, aged 22, has had amenorrhea for the past eight months. She is not pregnant. During this time she has been putting on weight but feels tired out all the time. What is the accepted treatment in such a case? Please omit name and address.

M.D., New York.

ANSWER.—The treatment of amenorrhea is generally unsatisfactory. If a systemic disease, such as anemia, is present it should be treated. General hygienic measures such as fresh air, proper food, rest and exercise are most essential. Glandular extracts of the ovaries, thyroid and pituitary glands, are frequently used but with little success. Likewise dilation and curettement, although frequently done for amenorrhea, seldom yield results. Recently excellent results have been obtained by Rubin and by Rongy with small doses of the roentgen ray; but great caution must be exercised in the selection of cases and the radiation should be given only by an expert radiologist with the cooperation of an able gynecologist. It is of great importance to assure the patient that results can frequently be obtained, because mental help is a great aid.

Medical Education, Registration and Hospital Service

COMING EXAMINATIONS

AMERICAN BOARD FOR OPHTHALMIC EXAMINATIONS: Minneapolis, June 11. Sec., Dr. William H. Wilder, 122 S. Michigan Ave., Chicago.

AMERICAN BOARD OF OTOLARYNGOLOGY: Minneapolis, June 11, Sec., Dr. W. P. Wherry, 1500 Medical Arts Bldg., Omaha.

ARKANSAS: Little Rock, May 9-10. Sec., Reg. Bd., Dr. J. W. Walker, Fayetteville. Sec., Homeo. Bd., Dr. A. A. Pringle, Eureka Springs. Sec., Eclectic Bd., Dr. C. E. Laws, 803½ Garrison Ave., Fort Smith.

CONNECTICUT: New Haven, June 9. State Board of Healing Arts, Box 1895, Yale Station, New Haven.

DELAWARE: Wilmington, June 19-21. Sec., Dr. Henry W. Briggs, 1026 Jackson St., Wilmington.

FLORIDA: Jacksonville, June 11-12. Sec., Dr. William M. Rowlett, 812 Citizens Bank Bldg., Tampa.

GEORGIA: Atlanta and Augusta, June 6-8. Sec., Dr. B. T. Wise, Americus, Georgia.

ILLINOIS: Chicago, June 26-29. Supt. of Regis., Mr. V. C. Michels, Springfield.

INDIANA: Indianapolis, June 19. Sec., Dr. E. M. Shanklin, 421 State House, Indianapolis.

IOWA: Iowa City, June 5-7. Dir., Mr. H. W. Grefe, Des Moines.

KANSAS: Kansas City, June 19. Sec., Dr. Albert S. Ross, Sabetha.

KENTUCKY: Louisville, June 12. Sec., Dr. A. T. McCormack, 532 W. Main St., Louisville.

LOUISIANA: New Orleans, June 14-16. Sec., Reg. Bd., Dr. Roy B. Harrison, 1507 Hibernia Bank Bldg., New Orleans.

MARYLAND: Baltimore, June 19-22. Sec., Reg. Bd., Dr. Henry M. Fitzhugh, 1211 Cathedral St., Baltimore. Homeo. Bd., June 12. Sec., Dr. J. S. Garrison, 517 Old Orchard Rd., Ten Hills, Baltimore.

MICHIGAN: Ann Arbor, June 12-14 and Detroit, June 18-20. Sec. Dr. Guy L. Connor, 707 Stroh Bldg., Detroit.

MINNESOTA: Minneapolis, June 5. Sec., Basic Science Bd., Dr. E. T. Bell, Anatomy Bldg., University of Minnesota, Minneapolis.

MISSISSIPPI: Jackson, June 21-22. Sec., Dr. F. J. Underwood, Jackson.

NATIONAL BOARD OF MEDICAL EXAMINERS: Class A Medical Schools, June 13-15. Dir., 608-12 Fifteenth and Locust Sts., Philadelphia.

NEBRASKA: Omaha, May 1. Sec., Basic Science Bd., Mr. Lincoln Frost, Lincoln.

NEVADA: Carson City, May 7-9. Sec., Dr. Edw. E. Hamer, Carson City.

NEW JERSEY: Trenton, June 19-20. Sec., Dr. Chas. B. Kelley, 30 W. State St., Trenton.

NEW YORK: New York City, Albany, Syracuse and Buffalo, June 25-28. Sec., Dr. Harold Rypins, Educational Bldg., Albany.

NORTH CAROLINA: Raleigh, June 18. Sec., Dr. John W. MacConnell, Davidson.

OHIO: Columbus, June 6-8. Sec., Dr. H. M. Platter, State Savings Bank Bldg., Columbus.

SOUTH CAROLINA: Columbia, June 26. Sec., Dr. A. E. Earle Boozer, 505 Saluda Ave., Columbia.

TENNESSEE: Memphis, Nashville, Knoxville, June 14-15. Sec., Dr. A. B. De Loach, Medical Arts Bldg., Memphis.

TEXAS: Austin, June 19-21. Sec., Dr. T. J. Crowe, 918-919 Mercantile Bank Bldg., Dallas.

VIRGINIA: Richmond, June 19-22. Sec., Dr. J. W. Preston, Box 444, Roanoke.

WISCONSIN: Milwaukee, June 26-28. Sec., Reg. Bd., Dr. Robert E. Flynn, La Crosse. Sec., Basic Science Bd., Prof. M. F. Guyer, University of Wisconsin.

Minnesota January Examination

Dr. A. E. Comstock, secretary of the Minnesota State Board of Medical Examiners, reports the oral, written and practical examination held at Minneapolis, Jan. 17-19, 1928. The examination covered 11 subjects and included 60 questions. An average of 75 per cent was required to pass. Twenty-four candidates were examined, all of whom passed. Nine physicians were licensed by reciprocity and 3 physicians were licensed by endorsement of their credentials. The following colleges were represented:

College	PASSED Year Grad.	Per Cent
State University of Iowa College of Medicine	(1926)	93.1, 93.5
University of Minnesota Medical School	(1927)*	86.1, 87.3, 87.3, 87.4, 87.6, 88.3, 88.5, 88.6, 89.2, 89.4, 89.5, 89.6, 90.4, 91, 91, 92, 92.1, 92.2, 92.4
University of Pennsylvania School of Medicine	(1925) (1926)	91.3, 88.3, 91.5

College	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
Rush Medical College	(1927)	Iowa
University of Illinois College of Medicine	(1922)	Illinois
State University of Iowa College of Med.	(1925), (1926)	Iowa
Johns Hopkins University College of Medicine	(1920)	Maryland
University of Michigan Medical School	(1910)	S. Dakota
University of Nebraska College of Medicine	(1925)	Nebraska
Ohio State University College of Medicine	(1921)	Ohio
University of Virginia Department of Medicine	(1926)	Virginia

College	LICENSED BY ENDORSEMENT Year Grad.	Endorsement with
University of Pennsylvania School of Medicine	(1926)	N. B. M. Ex.
University of Pittsburgh School of Medicine	(1925)	N. B. M. Ex.
University of Toronto Faculty of Medicine	(1925)	N. B. M. Ex.

* These candidates will receive their M.D. degrees on the completion of one year's internship in a hospital.

Ohio January Reciprocity Report

Dr. H. M. Platter, secretary of the Ohio State Medical Board, reports that 29 candidates were licensed by reciprocity and 1 candidate was licensed by endorsement of his credentials, Jan. 4, 1927. The following colleges were represented:

College	LICENSED BY RECIPROCITY Year Grad.	Reciprocity with
College of Medical Evangelists	(1924)	California
Howard University School of Medicine	(1912)	Kansas
Northwestern University Medical School	(1907) (1918)	Illinois California; (1926) Wisconsin
Rush Medical College	(1897)	Indiana; (1902) Illinois
University of Illinois College of Medicine	(1926)	Illinois
Medical College of Indiana, Indianapolis	(1902)	Indiana
State University of Iowa College of Medicine	(1923)	Iowa
Kentucky School of Medicine, Louisville	(1901)	Kentucky
University of Louisville School of Medicine	(1916)	Kentucky
Johns Hopkins University School of Medicine	(1921, 2)	Maryland
University of Maryland School of Medicine and the College of Phys. and Surg.	(1886)	Arkansas; (1916) W. Virginia
University of Michigan Medical School	(1925)	Michigan
St. Louis University School of Medicine	(1919) (1925)	Washington Pennsylvania
Eclectic Medical College	(1919)	Indiana
University of Pennsylvania School of Medicine	(1924)	Mississippi
University of Pittsburgh School of Medicine	(1917)	Penna.
Meharry Medical College	(1925)	Tennessee
University of Tennessee College of Medicine	(1925)	Tennessee
Marquette University School of Medicine	(1927)	Wisconsin
McGill University Faculty of Medicine	(1906)	New York
Queen's University Faculty of Medicine	(1912)	New York
University of Toronto Faculty of Medicine	(1908)	Illinois
University of Palermo, Italy	(1893)	Penna.

College	LICENSED BY ENDORSEMENT Year Grad.	Endorsement with
Creighton University School of Medicine	(1924)	N. B. M. Ex.

Massachusetts November Examination

Dr. Frank M. Vaughan, secretary of the Massachusetts Board of Registration in Medicine, reports the oral, written and practical examination held at Boston, Nov. 8-10, 1927. The examination covered 17 subjects and included 70 questions. An average of 75 per cent was required to pass. Of the 103 candidates examined, 44, including 4 osteopaths, passed, and 59, including 26 osteopaths, failed. Six candidates were licensed by endorsement of their credentials. The following colleges were represented:

College	PASSED Year Grad.	Per Cent
College of Medical Evangelists	(1927)	87.5
State University of Iowa College of Medicine	(1923)	78
Johns Hopkins University School of Medicine	(1924)	81.9
University of Maryland School of Medicine and the College of Physicians and Surgeons	(1925)	75
Boston University School of Medicine	(1924) (1926)	75.2; 83.9; (1927) 75, 79.7
Harvard University Medical School	(1924) (1927)	87.6; (1925) 82.3, 85.3, 86.5, 81.2, 82.1, 82.5
Tufts College Medical School	(1923) (1927)	76.4; (1926) 76.9; 76.1, 76.8, 77, 77.1, 78, 78.2, 79.9, 80, 81.5, 82.3, 82.4, 82.9, 85.6, 86, 87.3, 88.5
Columbia Univ. College of Phys. and Surg.	(1894)	75; (1914) 83
Jefferson Medical College of Philadelphia	(1922)	78.9
Temple University School of Medicine	(1926)	82.1
Woman's Medical College of Pennsylvania	(1926)	80
McGill University Faculty of Medicine	(1922)	85.4; (1924) 86.9
Osteopaths		76.2, 78.3, 78.6, 79.3

College	FAILED Year Grad.	Per Cent
Chicago Medical School	(1926)	65.4
Boston University School of Medicine	(1926)	68.3
College of Physicians and Surgeons, Boston	(1926) (1927)	68.3; 51, 66.7, 69.1
Middlesex College of Med. and Surg.	(1921)	68.1; (1923) 58.6, 59.6, 61.5; (1926) 51.8, 57.8, 64.2; (1927) 68.1
Tufts College Medical School	(1927)	69.2, 71, 71.1, 71.8
Kansas City University of Physicians and Surgeons	(1926) (1927)	58.4; 32.4, 42, 51.1
Temple University School of Medicine	(1926)	73.7
University of Montreal Faculty of Medicine	(1921) (1925)	59; 53.7, 62, 65.1, 65.7; (1927) 67.3
National University of Athens, Greece	(1922)	51.2
University of Warsaw, Poland	(1926)	57.7*
School of Medicine and Surgery, Oporto, Portugal	(1925)	69.4
University of Coimbra, Portugal	(1926)	62.3*
Osteopaths		39.6, 53, 54.8, 58.4, 59.6, 61.7, 61.7, 62.4, 63.1, 63.3, 63.4, 63.7, 63.9, 64.5, 64.6, 64.7, 65.7, 66.4, 66.5, 66.5, 66.8, 67.6, 70.1, 71.3, 71.5, 71.6

College	LICENSED BY ENDORSEMENT Year Grad.	Endorsement with
Boston University School of Medicine	(1926)	N. B. M. Ex.
Harvard University Medical School	(1925, 2), (1926, 2)	N. B. M. Ex.
Cornell University Medical School	(1925)	N. B. M. Ex.

* Verification of graduation in process.

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Book Notices

BEDSIDE DIAGNOSIS. By American Authors. Edited by George Blumer, M.D., David P. Smith Clinical Professor of Medicine, Yale University School of Medicine. Three Volumes and General Index. Cloth. Price, $30 per set. Pp. 2820, with 890 illustrations. Philadelphia: W. B. Saunders Company, 1928.

A treatise on diagnosis might be written from any one of a number of points of view. The plan could call for a voluminous work or for a brief one; for an exhaustive book or for one limited to certain aspects of the subject. Confronted with a patient, the physician must reason inductively from that which he can perceive or discover to a description of the condition from which the patient suffers. Books on diagnosis have been written from this point of view. More volumes, however—nearly all works on the practice of medicine, in fact—name the various conditions and then outline the data from which diagnoses can be made. This is the plan adopted for the new voluminous work on bedside diagnosis by Dr. George Blumer of Yale. To understand the reason for the title employed, one must read the explanation of the editor, who says that the idea has been to call attention, by means of the title, to the fact that an attempt has been made to emphasize the value, in diagnosis, of the senses aided only "by such simple instruments as the thermometer, the stethoscope and those examinations which any physician can make without extensive laboratory equipment." Accordingly, the technic of laboratory procedures is omitted in favor of material that will furnish fundamental understanding of the disease in question. To this are added data dealing with interpretation of history, symptoms, physical signs and the clinical significance of laboratory results. Diseases of similar etiology or those which affect certain systems are found together in groups, and frequently a paragraph or section of introduction gives a general view of the material to follow. The three volumes are constructed of articles by various eminent contributors, who write, for the most part, in the style of the cultured essayist. The work is not a brief book of ready reference or an exhaustive treatise wherein can be found everything on diagnosis which one might seek. Each volume is indexed, and a desk index is furnished in a separate binding.

HANDBOOK OF DISEASES OF THE NOSE, THROAT AND EAR FOR STUDENTS AND PRACTITIONERS. By W. S. Syme, M.D., F.R.S.E., Lecturer on Diseases of the Throat and Nose, Glasgow University. Second edition. Cloth. Price, $5. Pp. 400, with illustrations. New York: William Wood & Company, 1927.

Although enlarged by sixty pages this work still remains in the compend class. It is by preface dedicated to students and practitioners, but it is doubtful whether it will do more than assist the former in passing didactic medical school examinations in the specialty. It is extremely comprehensive in its scope of subjects covered but of necessity, in so small a volume, is brief in text. Commendable additions to the work have been made by the author with modernizing effect, chiefly in the notes on endoscopy and the use of surgical diathermy.

DIE BEHANDLUNG DER CYSTITIS, PYELITIS UND DER NIERENSTEINERKRANKUNG. Von Leopold Casper, Geh. San.-Rat, a. o. Professor an der Universität Berlin. Paper. Price, 3.60 marks. Pp. 79, Leipsic: Georg Thieme, 1928.

This is a concise presentation of the principles guiding the treatment of the disorders quoted in the title. Sufficient pathologic data are furnished to explain the choice of the suggested therapeutic methods. As an indispensable prerequisite for the development of cystitis is mentioned the bacterial invasion of the bladder. Traumatization, contigual congestion, retention of urine and "colds" furnish only a local predisposition. As a characteristic syndrome, frequency of urinary impulses, pain and pus in the urine are included An alkaline reaction of the urine is not a necessary corollary of cystitis. Acute cystitis calls for rest in bed. Excessive pain and tenesmus are favorably influenced by opiates, preferably given by rectal administration. As a rule, local applications to the bladder may be dispensed within the acute cystitis. In gonorrheal cystitis, however, the general treatment quite often fails to furnish relief, mainly on account of the involvement of the posterior urethra. In such instances, irrigations after Diday with a silver solution are advantageously employed. In chronic cystitis it is paramount to determine causative conditions, such as obstructions in the urinary outlet, concretions and vesical tumors. Tuberculous cystitis of course calls for the removal of the tuberculous kidney if conditions permit nephrectomy. For medication the various methenamine compounds are recommended. In obstreperous cases of chronic cystitis, mercuric chloride solutions from 1 in 10,000 to 1 in 3,000 are serviceable, but the reaction following as a rule is painful. For the treatment of pyelitis the author demands differentiation of inflammations confined to the pelvis from those instances in which the secreting renal parenchyma is also involved. In acute pyelitis general treatment is advocated. If this fails, local applications with the aid of the ureteral catheter are to be tried. In instances of ureteral stones, nonoperative treatment by injection of lubricants into the ureter is always worthy of a trial. The author cautions against any forcible attempts to dilate the ureter for the purpose of evacuating the concretion. In dealing with renal concretions, pronounced conservatism is recommended. The indications for operations and the choice of the special procedure are thoroughly discussed. The dietary provisions concerning the prevention of recurrences are also mentioned.

SHAKEN BY THE WIND. A Story of Fanaticism. By Ray Strachey. Cloth. Price, $2.50. Pp. 317. New York: Macmillan Company, 1928.

Mrs. Strachey is a sister-in-law to Lytton Strachey, the eminent biographer. According to the introduction to this book, her grandmother, Hannah Whitall Smith, left a box of records and documents having to do with incidents in the notorious evangelistic movements of a century ago. That was the period when dozens of religious cults, some of them with healing aspects, were competing for public popularity. The "Holy Rollers" sect is the prominent one in the novel by Mrs. Strachey. The reader can follow here the manner in which addiction to such movements results in breaking up the family. He will find here a perfect exemplification of the cultist leader, fanatical but inevitably commercial and oversexed. The story is grim, sordid, possibly somewhat salacious, but it is at the same time instructive and of interest. The story of the cultist leader in this novel might well be the story of Benjamin of the House of David, or of any one of a half-dozen similar cultist leaders. The reader who wishes novels with a purpose and who is not too insistent on perfection of literary quality will find Mrs. Strachey's novel well worth while.

LIVING MACHINERY. Eight Lectures Delivered at the Lowell Institute, Boston, March, 1927. By A. V. Hill, M.A., Sc.D., F.R.S., Fullerton Research Professor of the Royal Society, London. Cloth. Price, $3. Pp. 306, with illustrations. New York: Harcourt, Brace & Company, 1927.

The first six lectures were designed as the Christmas lectures to a juvenile auditory at the Royal Institution in London. They deal with those phases of physiology which have reached their fascinating stage of development chiefly because of the resourceful and brilliant researches of the author. These six chapters on muscle and nerve, how they move and carry impulses, how they work together and how muscles get air and fuel, are written in a fascinating style. Many physiologists will welcome this authoritative discussion stripped of intricate and confusing details. For the Boston audience, apparently, the author added two additional lectures: "Physiology as a Meeting Ground of the Sciences" and "Mechanism and Purpose." It is difficult to understand why the author found it necessary, in this last chapter, to disown "a purely mechanistic view" of the wonderful mechanisms of the living body. It is to be questioned whether the author's picture, as expressed, is a "point of view not uncommon" among the investigators of living processes or any of the sciences related to biology. His deistic view of creation (p. 278 and p. 281) is, no doubt, as irrelevant to a discussion of "human machinery" as the reviewer's personal comments on that view even if expressed. The whole final chapter seems an incoherent expostulation of contradictions and

inconsistencies. Of this chapter he himself well said in the introduction that it is "not alas, even a consistent picture." Quoting scripture for a purpose, one could say that it is neither "hot nor cold." The entire chapter contains expressions of undigested views. Rambling indecisions—a veritable scientific drivel unworthy of a great scientist. A variety of statements can be quoted depending on the point of view of the citator. Apparently, the author is still mentally agitated by mutually incompatible views unfit for publication in a scientific book.

LABORATORY MANUAL FOR THE DETECTION OF POISONS AND POWERFUL DRUGS. By Dr. Wilhelm Autenrieth, Professor in the University of Freiburg I. B. Authorized translation by William H. Warren, Ph.D., Professor of Organic Chemistry in Clark University. Sixth edition translated from fifth German edition. Cloth. Price, $6. Pp. 698, with 60 illustrations. Philadelphia: P. Blakiston's Son & Company, 1928.

This well known laboratory manual has been thoroughly revised. Several new subjects and methods are considered. The references to original literature have been expanded, and other new material has been added. The book appears to cover its field thoroughly and adequately.

TECHNISCHE OPERATIONEN IN DER ORTHOPÄDIE (ORTHOKINETIK). Von Dr. med. Julius Fuchs, Facharzt für Orthopädie in Baden-Baden. Paper. Price, 16.50 marks. Pp. 230, with 126 illustrations. Berlin: Julius Springer, 1927.

The author designates under the somewhat pretentious name of technical operations a principle of application of apparatus in which the happy and fruitful idea of a harmonious relation between bloodless reconstruction and apparatus is realized. The principal feature is a simplification of "apparatotechnik" by the use of soft or semirigid cuffs for the grip on portions of the limb and of elastic strips or bands for the production of the kinetic effect. This strip technic is carried out by the use of perforated metal strips, which are fastened to the leather cuffs or bands and are put together to form splints or apparatus. This interesting system of semirigid splints is to serve different situations, under appropriate variations in the technic. Several of the types seem convincing; for instance, those applied to the limbs. Others seem to lack elementary physical principles; for instance, the semielastic supports advised for the back. Detailed descriptions of a number of the so-called technical operations or simply the applications of these elastic devices are given. For flatfoot a three cuff arrangement is used. An important factor, in the opinion of the author, is the effect of these appliances on the joint capsule. Much less convincing than the devices applied to the extremities are those contrived for the trunk and back. Here one misses the mechanical principles of the three point support necessary for efficient fixation. These "technical operations" on the trunk are used for spondylitis as well as for arthritis and for weight-bearing deformities. The author goes so far as to challenge the efficiency of the fusion operations of the spine in favor of his method. In spite of these occasional aberrations the book offers, all in all, an interesting contribution to the "apparatotechnik" of orthopedic surgery. The names chosen for the various phases of the method are too pretentious and consequently often misleading. The extension of the method to the spine with disregard of elementary mechanical requirements of supports is, however, a serious fault. The book is interesting and worthy of study. The illustrations, though simple, are instructive.

MEDICAL INSURANCE EXAMINATION: Modern Method and Rating of Lives for Medical Practitioners and Insurance Officials. By J. Paterson MacLaren, M.A., B.Sc., M.B. Cloth. Price, $5.75. Pp. 312, with illustrations. New York: William Wood & Company, 1927.

For a long time the only guides to medical examiners for life insurance were the directions or manuals of the various life insurance companies, which were more or less—usually less—comprehensive. Then Charles Lyman Greene wrote his treatise, which had deserved popularity but was chiefly valuable as a manual of physical diagnosis. As life insurance in the course of its evolution became more and more of a science, the need of a textbook comprising both medical and insurance experience became more apparent, and so Foxworthy's Life Insurance Examinations appeared to satisfy this need and did it well. Recently, Dingman's Insurability Prognosis and Selection has been published with a decided trend toward the insurance aspect. Dingman's book is really a pioneer work from the home office textbook standpoint. The value of these two last named books has been hampered by their cost, which is too great for the average examiner of limited experience and means to incur.

It is rather strange that out of South Africa should have come an excellent concise summary on the subject of medical examination for life insurance. It is a moderate sized and moderately priced book which considers the subject of medical insurance examinations, from the point of view both of the physician and of the insurance company, and also gives a rather comprehensive view of the bearing of impairments on insurability and on the much vexed problem of substandard ratings. Its chief value is to the examiner rather than to the home office, medical director or underwriter. The ratings are of value only to emphasize the importance of impairments to examiners, and it contains a lot of valuable material for the medical examiner which is excelled only by the larger and much more expensive book of Foxworthy's. It is a question whether or not this book will be popular in the United States, because, excepting the author's own experience as an examiner, which is exceedingly well portrayed, practically all information has been obtained from American sources already available. The book should have a good sale in the British possessions because of the limited sale there of American books.

The first section of the book deals with the examination and confidential report; the second section details the physical examination; the third, which is entitled "Diseases as Insurance Impairments," discusses the effect of certain abnormalities on the evaluation of insurance risks, together with the relations of occupation and environment, disease, and the old and new methods of rating of lives. The three appendixes contain much material of exceeding importance to examiners and possibly to underwriters.

The book is excellent. Some of the phraseology will need transmutation into our own tongue, such as the use of the word "proposer" for our term "applicant," and the like. The typography is good, and the use of black letter emphasis not extreme. The paper is heavy and the binding none too good.

ARBEITEN ÜBER TROPENKRANKHEITEN UND DEREN GRENZGEBIETE: BERNHARD NOCHT ZU SEINEM 70. GEBURTSTAG VON FREUNDEN, UND SCHÜLERN GEWIDMET. Hamburgische Universität. Abhandlungen aus dem Gebiet der Auslandskunde. Band XXVI. Paper. Pp. 643, with illustrations. Hamburg: L. Friederichsen & Company, 1927.

This massive volume is dedicated to the well known worker in tropical diseases in Hamburg, Bernhard Nocht, on his seventieth birthday. The volume contains no less than nearly a hundred separate articles on problems in tropical pathology and hygiene and related fields from practically all corners of the world. No doubt the majority of these articles will find their way also into current periodical literature. All the illustrations are uniformly high grade. The volume is published by the University of Hamburg in its series entitled "Abhandlungen aus dem Gebiete der Auslandskunde."

HYGIENE AND SANITATION. The Essentials of Modern Health Care. By Jesse Feiring Williams, M.D., Professor of Physical Education, Teachers College, Columbia University. Cloth. Price, $2 net. Pp. 344, with 52 illustrations. Philadelphia: W. B. Saunders Company, 1927.

THE PRINCIPLES OF PHYSICAL EDUCATION. By Jesse Feiring Williams, A.B., M.D., Professor of Physical Education, Teachers College, Columbia University. Cloth. Price, $3 net. Pp. 481, with illustrations. Philadelphia: W. B. Saunders Company, 1927.

Dr. Williams is one of the sound teachers of health in the United States. As professor of physical education in the Teachers College of Columbia University, he has been associated with serious work in this field from the first. He is not given to any fads or notions but may be depended on for a rational point of view. He recognizes as the basis of physical education the development of control over certain fundamental activities, the development of correct attendance in play, and the use of sport to secure standards of conduct which are useful in life. The books are not especially planned for easy reading but rather for study and reference by those whose work calls them to these fields.

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A SYNOPSIS OF PHYSIOLOGY. By A. Rendle Short, M.D., B.S., B.Sc., Surgeon to the Bristol Royal Infirmary, and C. I. Ham, M.B., B.Ch., M.R.C.S., Demonstrator in Physiology to the University of Bristol. Cloth. Price, $3.50. Pp. 258, with 27 illustrations. New York: William Wood & Company, 1927.

As the title implies and the preface directly states, this volume cannot be used in place of a suitable textbook of physiology or a good course of lectures. With the aid of this synopsis the student of physiology can more readily review his subject and extend his knowledge of it. The essential facts of biochemistry, physiology and pharmacology are presented in outline form, and a fair number of suitable diagrams and figures occur in the text. It is a useful compend.

LES TROUBLES FONCTIONNELS DE L'APPAREIL GÉNITAL DE LA FEMME. Étude physiologique clinique et thérapeutique. Par Gaston Cotte, professeur agrégé à la Faculté de médecine de Lyon. Paper. Price, 60 francs. Pp. 570, with 117 illustrations. Paris: Masson & Cie, 1928.

To some persons the term "functional disorder" implies an illness which is independent of any organic lesion and which may be attributed to a physiopathic or psychopathic imbalance. Cotte, however, maintains that simply because we cannot find the cause of an affliction by the means at our command we must not conclude that it does not exist. In many instances operative procedures have revealed macroscopic or microscopic reasons for so-called functional afflictions of the female generative apparatus. The author has written this book in a masterly way. He has thoroughly reviewed the literature for his material and it was an agreeable surprise to see many American references quoted in addition to the usual French and German ones. Furthermore, the literature is down to date, for many 1927 articles are mentioned. The book is divided into seven chapters, of which the longest is on menstruation and its disorders. The section on sterility contains illustrations of many operations for the relief of this condition. The encyclopedic nature of the book prohibits an analysis of the various chapters. The book is well printed, abundantly illustrated, and written in a readable style for those not especially well versed in French. The index is an exhaustive one and this is a point to be especially emphasized in a foreign book. This is a valuable contribution to the subject of gynecology and is particularly useful as a source of reference.

Books Received

Books received are acknowledged in this column, and such acknowledgment must be regarded as a sufficient return for the courtesy of the sender. Selections will be made for more extensive review in the interests of our readers and as space permits. Books listed in this department are not available for lending. Any information concerning them will be supplied on request.

NELSON LOOSE-LEAF LIVING SURGERY. Prepared Under the Direction of an Advisory Board Comprising the Leading Surgeons in the Profession. Editor-In-Chief, Allen O. Whipple, M.D., Professor of Surgery, College of Physicians and Surgeons, Columbia University. Associate editor, Fordyce B. St. John, M.D., Professor of Surgery, College of Physicians and Surgeons, Columbia University. Volumes I, II, III and IV. (To be in eight volumes including index.) Cloth. Price, $87.50 per set. Pp., each volume has separate pagination, with illustrations. New York: Thomas Nelson & Sons, 1927.

Another extensive contribution to systematic surgical literature.

LOCAL ANESTHESIA. A Short Course for Students and Surgeons. By Géza de Takáts, M.D., M.S., Assistant Professor of Surgery, Northwestern University Medical School. With a foreword by Allen B. Kanavel, A.B., M.D., D.Sc., Professor of Surgery, Northwestern University Medical School. Cloth. Price, $4. Pp. 221, with 117 illustrations. Philadelphia: W. B. Saunders Company, 1928.

Excellent brief guide to modern technic of local anesthesia.

TREATMENT OF DISEASE IN INFANTS AND CHILDREN. By Hans Kleinschmidt, M.D., Professor of Pediatria, University of Hamburg. Authorized translation of the fifth German edition with additions by Harry M. Greenwald, M.D., Attending Pediatrician to the United Israel Zion Hospital, Brooklyn, N. Y. Cloth. Price, $5 net. Pp. 359. Philadelphia: P. Blakiston's Son & Company, 1928.

Brief handbook replete with prescriptions and formulas.

ERBLICHKEIT UND NERVENLEIDEN. Von Dr. F. Kehrer, o. ö. Professor, Direktor der Psychiatrischen und Nervenklinik Münster i. W. I. Ursachen und Erblichkeitskreis von Chorea, Myoklonie und Athetose. Paper. Price, 18 marks. Pp. 136, with 60 illustrations. Berlin: Julius Springer, 1928.

Hereditary and other effects in nervous disorders carefully analyzed.

INTRODUCTION TO THE HISTORY OF SCIENCE. Volume I from Homer to Omar Khayyam. By George Sarton, Associate in the History of Science, Carnegie Institution of Washington. Cloth. Price, $10. Pp. 839. Baltimore: Williams & Wilkins Company, 1927.

Tremendous accumulation of knowledge of scientific beginnings.

COURIERS OF MERCY. Friendly Talks to Nurses. By Edward F. Garesché, S. J., General Spiritual Director of the International Catholic Guild of Nurses. Cloth. Price, $1.50. Pp. 190, with 1 illustration. Milwaukee: Bruce Publishing Company, 1928.

Inspirational literature for Catholic nurses.

REFLECTIONS. A Book of Poems. By James Thomas Nix, M.D., LL.D. With an introduction by William Prentiss Brown, A.B., M.A., Department of English, Tulane University. Cloth. Price, $2. Pp. 118. New York: Walter Neale, 1927.

Rhymes and one or two poems.

STAUBLUNGE UND STAUBLUNGENTUBERKULOSE. Von Dr. Franz Ickert, Regierungs- und Medizinalrat in Gumbinnen. Paper. Price, 4.80 marks. Pp. 64, with 7 illustrations. Berlin: Julius Springer, 1928.

Studies of the effects of dusty industries on lungs.

MY LIFE TRANSFORMED. By Helen Heckman. Cloth. Price, $2.50. Pp. 202, with illustrations. New York: Macmillan Company, 1928.

The story of rehabilitation of a sadly disabled life.

YEAR-BOOK OF PHARMACY: Comprising Official Information Respecting the Pharmaceutical Society of Great Britain, Scientific Abstracts Relating to Pharmacy, Materia Medica, and Chemistry, October, 1926, to October, 1927, with the Transactions of the British Pharmaceutical Conference at Its Sixty-Fourth Annual Meeting. Edited by C. H. Hampshire, M.B., B.S., B.Sc. Cloth. Pp. 690, with illustrations. London: Pharmaceutical Press, 1927.

HANDBUCH DER NORMALEN UND PATHOLOGISCHEN PHYSIOLOGIE MIT BERÜCKSICHTIGUNG DER EXPERIMENTELLEN PHARMAKOLOGIE. Herausgegeben von A. Bethe, G. v. Bergmann, G. Embden, und A. Ellinger. Band III. B./II. Verdauung und Verdauungsapparat. Von B. P. Babkin, G. v. Bergmann, etc., etc. Paper. Price, 120 marks. Pp. 1489, with 292 illustrations. Berlin: Julius Springer, 1927.

THE WORLD OF ATOMS. Ten Non-Mathematical Lectures. By Arthur Haas, Ph.D., Professor of Physics in the University of Vienna. Translated by Horace S. Uhler, Ph.D., Associate Professor of Physics, Yale University. Cloth. Price, $3 net. Pp. 139, with 31 illustrations. New York: D. Van Nostrand Company, Inc., 1928.

KLINISCHE GASSTOFFWECHSELTECHNIK. Von Dr. H. W. Knipping, Priv.Doz. an der medizinischen Klinik der Universität Hamburg, und Dr. H. L. Kowitz, Professor an der medizinischen Klinik der Universität Hamburg. Paper. Price, 18 marks. Pp. 193, with 74 illustrations. Berlin: Julius Springer, 1928.

STAMMERING. A Psychoanalytic Interpretation. By Isador H. Coriat, M.D. Nervous and Mental Disease Monograph Series No. 47. Boards. Price, $2. Pp. 68. Washington, D. C.: Nervous and Mental Disease Publishing Company, 1928.

DIE METHODIK DER FERMENTE. Herausgegeben von Carl Oppenheimer und Ludwig Pincussen. Lieferung 2. Paper. Price, 28 marks. Pp. 321-624, with 116 illustrations. Leipsic: Georg Thieme, 1928.

THIRTY-EIGHTH ANNUAL REPORT OF THE VISITING NURSE ASSOCIATION OF CHICAGO FOR THE YEAR ENDING DECEMBER 31, 1927. Paper. Pp. 62, with illustrations. Chicago, 1928.

SYSTEMIC AND FOCAL IMMUNIZATION THROUGH IRRADIATION. By S. Peskind, B.S., M.D. Paper. Price, $1. Pp. 30. Cleveland: S. F. Mount Printing Company, 1928.

REPORT ON THE HEALTH OF THE ARMY FOR THE YEAR 1926. Volume LXII. Paper. Price, 3s. 6d net. Pp. 136. London: His Majesty's Stationery Office, 1928.

ANNUAL REPORT OF THE SOCIETY OF THE LYING-IN HOSPITAL OF THE CITY OF NEW YORK FROM JANUARY TO DECEMBER, 1927. Paper. Pp. 73. New York, 1928.

ESCULAPE CHEZ LES ARTISTES. Par le Docteur Cabanès. Paper. Price, 15 francs. Pp. 403, with 197 illustrations. Paris: E. Le François, 1928.

THE COMMONWEALTH FUND. Ninth Annual Report for the Year 1926-1927. Paper. Pp. 78, with illustrations. New York, 1928.

MORAL MÉDICA. Por L. Razetti, presidente de la sociedad médica de Caracas. Paper. Pp. 259. Caracas, 1928.

Medicolegal

Chronic Appendicitis Not Permanent Total Disability

(Cameron Coal Co. v. Industrial Commission et al. (Ill.), 158 N. E.R. 399)

The Supreme Court of Illinois, in reversing a judgment which affirmed an award of $14 a week for 267⅔ weeks and thereafter a pension for life of $25 a month for total and permanent disability from work, says that the claimant, while employed as a day laborer in a coal mine, attempted to lift or move a large stone weighing about 400 pounds, and in doing so slipped on some loose stones and dirt and claimed to have thereby injured himself through the right side and hips, extending into his groin and causing pain in that part of his body. Two major questions were presented by the record: First, was the claimant suffering as the result of an accidental injury received in the course of his employment? Second, was his disability total and permanent? As to the first of these questions, this court does not express an opinion. The consensus of the medical testimony was to the effect that the claimant was suffering from chronic appendicitis. There was no evidence in the record that appendicitis is an incurable disease, nor was it shown that with proper treatment the claimant would be totally and permanently physically incapacitated for the performance of manual labor. To justify an award for permanent total incapacity the claimant must show, not only that he has been injured and is entitled to compensation for such injury, but also, by evidence, that the injuries will be reasonably certain to leave him permanently totally incapacitated from pursuing his usual and customary line of employment. There was in the record no basis for an award for permanent total disability and a pension for life.

Proof and Statute of Limitations in Gauze Case

(Searer v. Lower (Ohio), 158 N. E. R. 199)

The Court of Appeals of Ohio, in affirming a judgment for the defendant surgeon, says that from an examination of the record the defendant opened and closed the abdominal cavity of the plaintiff in August, 1921, and from that date until Oct. 20, 1923, the abdominal cavity remained closed, while it was unchallenged that on the reopening of the cavity on the latter date there was no cheese cloth or gauze whatever within it. Thus it was indisputable that the cheese cloth and gauze used in the operation of August, 1921, was then and there removed. The claim that particles of gauze were found on the surface of the wound would, at most, be merely an inference that the gauze was left in the cavity, but this inference, being shown not to be based on any fact, ceased to be an inference. The gauze on the surface of the healing wound, in the face of the established fact, forced the conclusion that in the process of treatment after the operation particles adhered to the unhealed incision; for the discovery of October, 1923, showed that the presence of the gauze was from an external rather than an internal cause, and hence it is the judgment of this court that there was no evidence of legal substance that the cheese cloth and gauze were not removed from the abdominal cavity in August, 1921, the date of the first operation.

It must also be observed that there should be proof tendered to support the allegations that the deposit of the gauze and its failure of removal were the proximate causes of the injuries complained of. The plaintiff contended that to the lay mind the mere presence of the gauze was sufficient on which to base a verdict for the recovery of damages, on the ground that the negligent act complained of resulted in the injuries. There may have been numerous causes, some of which were detailed by the defendant, as to why it was necessary to perform the operation of October, 1923. Without any medical proof as to proximate cause, the jury would be left to wander at will and make its own selection as to the specific cause of the injuries complained of. From the record, other causes than that of the gauze might naturally intervene. The only evidence that could sustain the verdict would be evidence that the negligent act complained of produced the injury. It was the duty of the plaintiff to submit expert proof, or at least some proof of legal character, showing the nexus between the gauze and the injuries alleged to be directly attributable to its presence in the abdominal cavity.

Another ground on which the court below directed a verdict for the defendant was that the suit was barred by the statute of limitations of Ohio, which requires in malpractice cases that they must be brought within one year from the time the cause of action accrued. The contract of employment between the surgeon and the patient is the determining factor. It is well settled in Ohio that the statute does not begin to run until the termination of the relationship, and only from the time when the employment ceases. The record showed by the plaintiff's testimony that he was discharged by the defendant in September, 1921, after a second operation, and that he thereupon returned to his home in another city, and again went under the care of his family physician. This testimony, on the question of the end of the employment, was similar to that of the defendant, who testified that his employment ceased in August, 1921. Thus, from the facts in the case, it seems perfectly clear that the statute of limitations was a bar to the action, which was not commenced until Aug. 15, 1924.

Claim Against Employer and Action Against Physician

(White v. Matthews (N. Y.), 224 N. Y. Supp. 559)

The Supreme Court of New York, appellate division, first department, says that the plaintiff brought this action to recover of the defendant, a physician and surgeon, damages alleged to have been sustained as the result of the defendant's malpractice in treating a fracture of the bones in and about the wrist of the plaintiff's right arm. As a first separate and complete defense the defendant in his answer alleged that the plaintiff (a nurse) was employed in a woman's hospital and was injured in the course of her employment; that under the provisions of the workmen's compensation law the plaintiff's employer provided medical services and attention to the plaintiff for the injuries which she had received; that the state industrial commission had made certain interlocutory awards pursuant to which various payments of compensation were made to her; and that having accepted said payments the plaintiff was barred from prosecuting a claim for said injury or the consequential result thereof against the defendant. The plaintiff moved the court to strike out said separate defense, but her motion was denied. Now the order denying the motion is reversed, and motion granted.

This court thinks that the court below erred in denying the plaintiff's motion. That court proceeded on the assumption that the plaintiff's employer, the woman's hospital, and the defendants were joint tort-feasors (wrongdoers), and that the plaintiff, having elected to accept the benefits of the workmen's compensation law, and having received compensation for the injuries which she had received while in the employ of the woman's hospital, might not ask independent damages of the defendant, although the defendant's want of skill and malpractice may have aggravated her injuries. Undoubtedly one who is responsible by his negligence for injuries sustained by another is not only responsible for the immediate injuries received but is also responsible for the aggravation thereof caused by unskilful surgical treatment.

The court below fell into the error of assuming that the proceeding to obtain compensation was an action for damages and that there were two tort-feasors here. But the plaintiff's claim for compensation under the workmen's compensation law was not based on negligence, or any wrongful act or omission on the part of the plaintiff's employer. Compensation was sought and received by the plaintiff on the fact alone that, when she sustained her injuries, she was an employee of the woman's hospital. No wrongful act on the part of any one was anywhere alleged in the pleadings as the cause of the plaintiff's injuries. How, therefore, could it be said that her employer and the defendant were joint tort-feasors? The decision of the court below was on the authority of the decision in *Pitkin* v. *Chapman*, 121 Misc. Rep. 88, 200 N. Y. Supp. 235; but this court is of the opinion that that case was erroneously decided and that the court in that case fell into the same error as the court below in this case.

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The injuries for which the plaintiff sought to recover in this action were additional to and entirely independent of those for which she received compensation. The allegation in the answer that the awards made to and accepted by the plaintiff were in compensation for all of the injuries set forth in the complaint was, at most, the conclusion of the pleader, not borne out by the facts. The recent case of *Hoehn* v. *Schenck*, 221 App. Div. 371, 223 N. Y. Supp. 418, involved the same question as was presented by this appeal. There the appellate division, second department, unanimously held that an action against a physician to recover damages for malpractice is not barred by the award of compensation under the workmen's compensation law, though the award may cover not only the original injuries but the injury arising from the malpractice of the attending physician. This court thinks the question was properly decided by the second department, and that the acceptance of compensation by the plaintiff did not bar her recovering damages of the defendant as the result of malpractice.

The Practice of Medicine—"Prescribe"—Information

(State v. Hueser (Iowa), 215 N. W. R. 643)

The Supreme Court of Iowa, in affirming a judgment of conviction of the defendant of unlawfully engaging in the practice of medicine without having obtained a license or certificate authorizing him to practice medicine, says that free trade in physic no longer prevails, although under the early common-law rule any person undertaking to treat the sick in the exercise of his vocation was legally a physician; but, as a matter of history, parliament, in 1422, enacted a statute regulating the practice of medicine and surgery and confined it to those who had studied the subject in a university and who were bachelors of science.

In Iowa a person is deemed to be engaged in the practice of medicine and surgery who (1) publicly professes to be a physician or surgeon; or (2) publicly professes to assume the duties incident to the practice of medicine or surgery; or (3) prescribes and furnishes medicine for human ailments, or treats the same by surgery. Section 2538, code 1924. It is further provided that the opening of an office or place of business for the practice of any profession for which a license is required or the announcing to the public in any way the intention to practice any such profession, or the use of any professional degree or designation or of any sign, card, circular, device or advertisement as a practitioner, or as a person skilled in same shall be deemed prima facie evidence "of engaging in the practice of such profession." Section 2528, code 1924.

The evidence in the instant case was replete with facts affirmatively showing that the defendant violated the prohibitions of the medical practice act. It was conceded that he was not a licensed physician. It might be that he was not in the class of the learned "Doctour of Phisike" in the Canterbury Tales of Chaucer, wherein we read:

> He knew the cause of every maladie,
> Were it of cold or hote or moist or drie,
> And when engendered and of what humour,
> He was a veray parfite practisour.

It was established that the defendant maintained an office on the door of which was an inscription "Dr. Evans Hueser." His office hours were also indicated thereon. He had patients, and treated them and prescribed for them. In one instance he gave a woman a physical examination to determine the condition of her ovaries, and after the examination pronounced them all right. He used a violet ray machine. He prescribed for one patient suffering from alleged female trouble a trade-marked antiseptic salve. It is quite apparent that his acts were within the prohibition of the criminal statute.

The defendant contended that the trial court erred in defining the word "prescribe" in an instruction which read:

> "Prescribe," as the word is used in the law, means designation of a remedy for an ailment or disease after having, by investigation, observation, or inquiry, ascertained the apparent nature thereof.

The supreme court discovers no basis for the criticism. It was quite apparent that the defendant was catering to the patronage of certain persons who believed they were suffering "from the ills which flesh is heir to," and by his conduct and conversation assured them of his ability to help them, and, in fact, tried to do so.

The defendant filed motions to set aside the order of the trial judge approving the county attorney's information, and to set aside the information. Both motions were based primarily on the ground that no minutes of any evidence signed by any witness and sworn to by any witness were returned with the information. The trial court overruled the motions and properly so. The statute does not require that the county attorney shall attach copies of sworn minutes of the evidence to the information. Even as to indictments, the statutory provisions in these particulars are directory.

Lastly, it was urged by the defendant that this action could not be instituted except at the instance of the state department of health. There was no merit in the claim. The defendant was accused of an indictable offense. It is the function of the grand jury to inquire into all indictable offenses triable within the county and present them to the court by indictment. Section 13702, code 1924. Furthermore the county attorney may at any time when the grand jury is not actually in session file in the district court, either in term or in vacation, an information charging a person with an indictable offense. Section 13645, code 1924. It is true that the state department of health is enjoined to enforce the provisions of the act in question, but the legislature never intended the power conferred on the state department of health to be exclusive or to supplant the provisions of the penal code. Here this court is concerned only with the provisions of the criminal statute. The court is dealing with an alleged criminal act. At most, the legislative intent, in conferring a power on the state department of health, is to supplement the power of the grand jury or county attorney in such matters, and not to supplant local jurisdiction in the premises.

Relations Between Physicians, Student and School

(Noren v. American School of Osteopathy (Mo.), 298 S. W. R. 1061)

The St. Louis Court of Appeals, in reversing an order which granted the defendant's motion for a new trial after the plaintiff had recovered a verdict for $3,500 damages, says that the petition, in substance, alleged that, as a prerequisite to graduation from the defendant's school of osteopathy, a certain senior student of the school, as agent and servant of the defendant, was required to give a certain number of osteopathic treatments to members of the general public, under the direction and supervision of the defendant, and that, while so treating the plaintiff, the student unskilfully, carelessly and negligently injured him. The evidence disclosed that the student and a member of the defendant's faculty, the director in charge of treatments, after an examination of the plaintiff conducted by both men, diagnosed his ailment as lumbago. The member of the faculty informed the plaintiff that the student was competent to treat him. On the occasion of the particular treatment complained of, the student first manipulated the plaintiff's hips and then twisted his head with such force as to cause his neck to crack with a loud noise, as a result of which the plaintiff was caused to suffer very severe and permanent injuries. There was evidence that an adjustment of the neck was not necessarily a treatment for lumbago, though occasionally, when a specific affliction was being treated, general treatments, in addition to treatments of the particular area affected, were also given.

This court is well aware that the relation of principal and agent or of master and servant is not held to exist between two physicians, where one is sent to treat the patient of the other, with the consent of the patient, and in pursuing his treatment acts wholly on his own initiative, and without direction from the other. Such rule is fully justified by reason. However, the converse of the rule must also apply, so that where the one physician retains control of the other as to the details of the treatment to be given, leaves nothing to the discretion of the attendant, and renounces no part of his functions as the sole physician in the case, there is sufficient reason for holding that the relation of principal and agent does exist. Accordingly, under the facts of this case,

this court cannot avoid the conclusion that there was substantial evidence from which a jury might properly have found that the relation of physician and patient existed between the defendant and the plaintiff rather than between the student and the plaintiff, and that the student was only the agent of the defendant through whose manual acts the course of treatment prescribed by it was to be administered.

So far as the actionable negligence in the case was concerned, there was substantial evidence from which it might reasonably be inferred that a treatment to the plaintiff's neck, in order to better his general physical condition, was proper in connection with the treatment of the specific ailment from which he was suffering, and that the application by the student of force sufficient to produce a partial dislocation of the vertebra in the plaintiff's neck was unwarranted in the practice of osteopathy, and was a negligent act. Such being true, the defendant was liable to respond to the plaintiff in damages for the negligence of the student, acting as its agent.

There was no error in refusing to give the jury an instruction requested by the defendant that, if the jury found and believed from the evidence that the student had given all the treatments required by the defendant to be given prior to the giving by him of the treatment complained of by the plaintiff, then the verdict must be for the defendant. It is the undoubted rule that, unless the terms of the employment of a physician limit the extent of his services, or a reasonable notice is given the patient that he will not undertake subsequent treatment, the relation of physician and patient continues unless the physician's services are no longer needed, unless ended by mutual consent, or revoked by dismissal. There was nothing in the record to indicate that the plaintiff had been advised that any limitation had been placed on the number of treatments to be given him by the student under the defendant's direction, and the relation of physician and patient had not been terminated either by mutual agreement or by dismissal. Consequently, in the absence of notice to the plaintiff from the defendant that the latter no longer assumed responsibility for the treatment given, it must be held that the relation theretofore established still continued.

Approved Definition of Insane Delusion in Will Case

(In re Barlum's Estate (Mich.), 215 N. W. R. 299)

The Supreme Court of Michigan, in affirming a judgment sustaining a contested will, holds that the trial court in directing a verdict for the will well said that an insane delusion exists when a person persistently believes supposed facts which have no real existence, and so believes such supposed facts against all evidence and probabilities and without any foundation or reason for the belief, and conducts himself as if such facts actually existed. In considering the question here presented it is to be borne in mind that no capricious and arbitrary dislikes, unjust suspicions, or prejudices against relatives or mistaken beliefs as to their feelings and designs toward the testator and his property, however visionary, nor belief of acts or facts which have any evidential basis, constitute, in law, insane delusions. If there are any facts, however little evidential force they may possess, on which the testator may in reason have based his belief, it will not be an insane delusion, though on a consideration of the facts themselves his belief may seem illogical and foundationless to the court; for a will, it is obvious, is not to be overturned because the testator has not reasoned correctly. The ultimate object of the inquiry is whether an insane delusion, destitute of all evidential support, spontaneously arising in the testator's diseased mind, influenced him and operated directly against the contestant. The burden is on the contestant to show that there were no facts from which the testator could, by any process of reasoning, however faulty, arrive at his declared conclusions. Actual or presumed innocence of the party in relation to whom the delusion is claimed does not preclude a sane and honest belief to the contrary for which there is any evidential support, however faulty and insufficient.

The supreme court says that the trial court's decision and definition are well sustained by many decisions of this court. The matter of natural justice has nothing to do with the case.

Society Proceedings

COMING MEETINGS

American Medical Association, Minneapolis, June 11-15. Dr. Olin West, 535 North Dearborn Street, Chicago, Secretary.

American Association for the Study of Allergy, Minneapolis, June 11-12. Dr. A. H. Rowe, 242 Moss Avenue, Oakland, Calif., Secretary.

American Association for the Study of Goiter, Denver, June 18-20. Dr. K. W. Kinard, Bryant Building, Kansas City, Mo., Secretary.

American Association for Thoracic Surgery, Washington, D. C., April 30-May 2. Dr. Ethan Flagg Butler, Sayre, Pa., Secretary.

American Association of Industrial Physicians and Surgeons, Rochester-Minneapolis, June 11-12. Dr. V. S. Cheney, 5446 S. Halsted Street, Chicago, Acting Secretary.

American Association of Genito-Urinary Surgeons, Washington, D. C., April 30-May 2. Dr. H. L. Kretschmer, 122 S. Michigan Avenue, Chicago, Secretary.

American Association of Pathologists and Bacteriologists, Washington, D. C., May 1-2. Dr. H. T. Karsner, 2109 Adelbert Road, Cleveland, Secretary.

American Bronchoscopic Society, Washington, D. C., April 30. Dr. Louis H. Clerf, 128 South 10th Street, Philadelphia, Secretary.

American Climatological and Clinical Association, Washington, D. C., May 1-2. Dr. A. K. Stone, Auburn Street, Framingham Center, Mass., Secretary.

American Dermatological Association, Washington, D. C. April 30-May 2. Dr. C. Guy Lane, 416 Marlborough Street, Boston, Secretary.

American Federation of Organizations for the Hard of Hearing, St. Louis, June 18-22. Miss Betty C. Wright, 1601, 35th Street, N. W., Washington, D. C., Secretary.

American Gastro-Enterological Association, Washington, D. C., April 30-May 1. Dr. W. J. Mallory, 1720 Connecticut Avenue, N. W., Washington, D. C., Secretary.

American Gynecological Society, Washington, D. C., April 30-May 2. Dr. Floyd E. Keene, Medical Arts Building, Philadelphia, Secretary.

American Heart Association, Washington, D. C., June 12. Dr. Haven Emerson, 370 Seventh Avenue, New York, Secretary.

American Laryngological Association, Washington, D. C., May 1-3. Dr. D. M. Coates, 1721 Pine Street, Philadelphia, Secretary.

American Laryngological, Rhinological and Otological Society, Washington, D. C., May 3-5. Dr. R. L. Loughran, 33 East 63d Street, New York, Secretary.

American Neurological Association, Washington, D. C., May 1-3. Dr. Henry A. Riley, 870 Madison Avenue, New York, Secretary.

American Ophthalmological Society, Washington, D. C., April 30-May 2. Dr. Emory Hill, Professional Building, Richmond, Va., Secretary.

American Otological Society, Washington, D. C., April 30-May 1. Dr. T. J. Harris, 104 East 40th Street, New York, Secretary.

American Pediatric Society, Washington, D. C., April 30-May 2. Dr. H. C. Carpenter, 1805 Spruce Street, Philadelphia, Secretary.

American Physiotherapy Association, Minneapolis, June 11-12. Miss I. M. Hazenbyer, 2900 Mildred Avenue, Chicago, Secretary.

American Proctologic Society, Rochester-Minneapolis, June 9-12. Dr. W. A. Fansler, 531 LaSalle Building, Minneapolis, Secretary.

American Psychiatric Association, Minneapolis, June 4-8. Dr. Earl D. Bond, 4401 Market Street, Philadelphia, Secretary.

American Psychopathological Association, Minneapolis, June 8. Dr. M. W. Peck, 520 Commonwealth Avenue, Boston, Secretary.

American Radium Society, Minneapolis, June 8-9. Dr. G. Grier, Jenkins Arcade Building, Pittsburgh, Secretary

American Society of Clinical Investigation, Washington, D. C., April 30. Dr. J. T. Wearn, Boston City Hospital, Boston, Secretary.

American Society of Clinical Pathologists, Rochester, Minn., June 8-11. Dr. W. T. Burdick, Republic Building, Denver, Secretary.

American Society of Tropical Medicine, Washington, D. C., May 1-2. Dr. Benjamin Schwartz, P. O. Box 131, Pennsylvania Avenue Station, Washington, D. C., Secretary.

American Surgical Association, Washington, D. C., April 30-May 2. Dr. Lincoln Davis, 205 Beacon Street, Boston, Secretary.

American Therapeutic Society, Minneapolis, June 9-11. Dr. W. J. Mallory, 1720 Connecticut Avenue, N. W., Washington, D. C., Secretary.

American Urological Association, Chicago, June 7-9. Dr. Alexander Randall, Medical Arts Building, Philadelphia, Secretary.

Arkansas Medical Society, El Dorado, May 1-3. Dr. W. R. Bathurst, 810 Boyle Building, Little Rock, Secretary

Associated Anesthetists of the United States and Canada, Minneapolis, June 11-12. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

Association for the Study of Internal Secretions, Minneapolis, June 12. Dr. F. M. Pottenger, Title Insurance Building, Los Angeles, Secretary.

Association of American Physicians, Washington, D. C., May 1-3. Dr. J. H. Means, Massachusetts General Hospital, Boston, Secretary.

California Medical Association, Sacramento, April 30-May 3. Dr. Emma W. Pope, 593 Market Street, San Francisco, Secretary.

Conference of State and Provincial Health Authorities, St. Paul, June 8-9. Dr. A. J. Chesley, State Department of Health, St. Paul, Secretary.

Congress of Physicians and Surgeons of North America, Washington, D. C., May 1-2. Dr. W. R. Steiner, 646 Asylum Avenue, Hartford, Conn., Secretary.

Connecticut State Medical Society, Bridgeport, May 23-24. Dr. C. W. Comfort, Jr., 27 Elm Street, New Haven, Secretary.

Georgia, Medical Association of, Savannah, May 9-11. Dr. A. H. Bunce, 139 Forrest Avenue, N. E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 8-11. Dr. Harold M. Camp, Lahl Building, Monmouth, Secretary.

International Anesthesia Research Society, Minneapolis, June 11-12. Dr. F. H. McMechan, Avon Lake, Ohio, Secretary.

Iowa State Medical Society, Cedar Rapids, May 9-11. Dr. Tom B. Throckmorton, Bankers Trust Building, Des Moines, Secretary.

Kansas Medical Society, Wichita, May 8-10. Dr. J. F. Hassig, 804 Huron Building, Kansas City, Secretary.

Maine Medical Association, Belgrade Lakes, June 18-20. Dr. B. L. Bryant, 265 Hammond Street, Bangor, Secretary.

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Massachusetts Medical Society, Worcester, June 5-6. Dr. Walter L. Burrage, 182 Walnut Street, Brookline, Secretary.
Medical Women's National Association, Minneapolis, June 11-12. Dr. Helen L. Palliser, 251 Church Street, Poughkeepsie, N. Y., Secretary.
Minnesota State Medical Association, Minneapolis, June 18. Dr. E. A. Meyerding, 11 West Summit Avenue, St. Paul, Secretary.
Mississippi State Medical Association, Meridian, May 8-10. Dr. T. M. Dye, Clarksdale, Secretary.
Missouri State Medical Association, Columbia, May 14-17. Dr. E. J. Goodwin, 634 N. Grand Boulevard, St. Louis, Secretary.
National Tuberculosis Association, Portland, Ore., June 18-20. Dr. C. J. Hatfield, Henry Phipps Institute, Philadelphia, Secretary.
Nebraska State Medical Association, Hastings, May 15-17. Dr. R. B. Adams, Center McKinley Building, Lincoln, Secretary.
New Hampshire Medical Society, Manchester, May 15-16. Dr. D. E. Sullivan, 7 North State Street, Concord, Secretary.
New Jersey, Medical Society of, Atlantic City, June 6-9. Dr. J. B. Morrison, 66 Milford Avenue, Newark, Secretary.
New Mexico Medical Society, Albuquerque, May 10-11. Dr. L. B. Cohenour, 219 West Central Avenue, Albuquerque, Secretary.
New York, Medical Society of the State of, Albany, May 21-24. Dr. D. S. Dougherty, 2 East 103d Street, New York, Secretary.
North Carolina, Medical Society of the State of, Pinehurst, April 30-May 2. Dr. L. B. McBrayer, Southern Pines, Secretary.
North Dakota State Medical Association, Devils Lake, May 23-24. Dr. J. G. Lamont, San Haven, Secretary.
Ohio State Medical Association, Cincinnati, May 1-3. Mr. Don R. Martin, 131 East State Street, Columbus, Executive Secretary.
Oklahoma State Medical Association, Tulsa, May 17-19. Dr. C. A. Thompson, 609 Barnes Building, Muskogee, Secretary.
Rhode Island Medical Society, Providence, June 7. Dr. J. W. Leech, 369 Broad Street, Providence, Secretary.
Texas, State Medical Association of, Galveston, May 8-10. Dr. Holman Taylor, Medical Arts Building, Fort Worth, Secretary.
West Virginia State Medical Association, Fairmont, May 21-24. Mr. Joe W. Savage, 303 Professional Bldg., Charleston, Executive Secretary.

Current Medical Literature

AMERICAN

The Association library lends periodicals to Fellows of the Association and to individual subscribers to THE JOURNAL in continental United States and Canada for a period of three days. Issues of periodicals are kept on file for a period of five years only. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 12 cents if two periodicals are requested). Periodicals published by the American Medical Association are not available for lending, but may be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

175: 301-452 (March) 1928

*Familial Hemorrhagic Condition Associated with Prolongation of Bleeding Time. G. R. Minot, Boston.—p. 301.
*Atypical Pathologic Hemorrhage in Early Life. T. E. Buckman, Jacksonville, Fla.—p. 307.
*Results of Liver Feeding in Pernicious Anemia. P. Starr, Chicago.—p. 312.
Chronic Aplastic Anemia and Symptomatic Hemorrhagic Purpura Probably Due to Benzene Poisoning: Case. J. S. Sweeney, Dallas, Texas.—p. 317.
*Fatalities Following Reinjection of Foreign Serum: Case. L. Tuft, Philadelphia.—p. 325.
*Encapsulated Pericardial Effusion. H. Wessler and J. Fried, New York.—p. 331.
*Postural Hypotension with Syncope: Treatment with Ephedrine. D. G. Ghrist and G. E. Brown, Rochester, Minn.—p. 336.
*Certain Advantages of Total Thyroidectomy in Selected Cases of Thyrotoxicosis of Exophthalmic Type. P. K. Gilman and W. E. Kay, San Francisco.—p. 350.
*Stammering Produced by Thyroid Medication. M. B. Gordon, New York.—p. 360.
Spina Bifida Occulta and Myelodysplasia with Unilateral Clubfoot Beginning in Adult Life. E. de Vries, Peking.—p. 365.
*Negative Pressure in Epidural Space. T. J. Heldt and J. C. Moloney; Detroit.—p. 371.
*Treatment of Diabetes with Acid-Alcoholic Extract of Plants Rich in Vitamin B. C. A. Mills, Peking.—p. 376.
Effects on Carbohydrate Metabolism of Acid-Alcoholic Extract of Plants Rich in Vitamin B. C. A. Mills, C. Chu-Pin and H. Su-En, Peking.—p. 384.
*Duodenal Flora in Achlorhydria. L. Ricen, H. J. Sears and L. M. Downing, Portland, Ore.—p. 386.
*Suspenders Versus Belts in Treatment of Gastric and Duodenal Ulcers. M. Einhorn, New York.—p. 395.
Emptying of Gallbladder: Use of Pituitary Extract. S. G. Meyers, Detroit.—p. 405.

Familial Hemorrhagic Condition.—Minot summarizes his paper as follows: There exists a chronic familial hemorrhagic condition characterized by a prolonged bleeding time in the absence of a decrease of blood platelets and a delayed coagulation time of the blood. Multiple ecchymoses and recurrent epistaxis are characteristic symptoms. Pathologic blood loss and abnormal bleeding time may be present at one time and not at another, but their occurrence is not necessarily synchronous. This hemorrhagic condition appears in infancy and may extend into adult life, but then its severity tends to decrease and the condition may disappear as the patient grows older.

Atypical Pathologic Hemorrhage in Infants.—Observations in five cases of purpura in infants are presented by Buckman. The remarkable feature of each case was the occurrence of both prolonged bleeding time and prolonged coagulation time in the presence of a normal or slightly elevated blood platelet count. In no case could a satisfactory explanation of the dyscrasia be found. In one case it was clearly demonstrated that the blood platelets were capable of causing the clotting of hemophilic blood as rapidly as the blood platelets of a normal person, thus suggesting that the condition is not allied to hemophilia and that prolonged coagulation time may occur in the presence of an apparently normal platelet picture.

Liver Feeding in Pernicious Anemia.—Starr's experience with liver feeding in pernicious anemia has been uniformly followed by recovery from anemia. The process is accompanied by two unique features, namely, rapid decrease of bilirubinemia and transient, sometimes marked, increase of reticulocytes. Anemia returned in one case at the end of ten months when liver was discontinued. Ten cases under observation from three to fourteen months now show no evidence of anemia. Advanced spinal cord degeneration is not altered by this recovery of the blood. The recurrence of glossitis and anemia when liver feeding was discontinued at the end of eleven months indicates that the underlying pathologic condition is still present.

Death Following Serum Reaction.—An unusual type of serum reaction is recorded by Tuft in a case in which death followed the intravenous reinjection of 10 cc. of antistreptococcic serum, twenty-eight days after a primary injection of 95 cc. of serum and twenty days after a mild serum sickness. Death here was due to a severe accelerated type of serum reaction, and occurred in spite of a preliminary attempt at so-called desensitization. A review of the literature on serum reactions seems to indicate that severe reactions of the type here described are more prone to follow reinjections of serum, particularly in persons who have previously had a normal type of serum reaction after the primary injection. This is borne out in the case recorded.

Encapsulated Pericardial Effusion.—Wessler and Fried report four cases of rheumatic heart disease in which there was clinical evidence of a fibrinous pericarditis, and, in addition, signs of a unilateral enlargement of the heart. Further, in corroboration of the clinical signs, there was in each case a unique change in the configuration of the heart which they have interpreted as a localized pericardial effusion. The salient points in the diagnosis were: (1) the presence of a pericardial murmur; (2) a rapid increase in the cardiac dulness to the right or to the left infraclavicular region; (3) a unique roentgenographic configuration of the heart corresponding to the area of dulness. (4) the rapid change in the contour of the heart which would be inconsistent with other causes for such a change in its configuration.

Postural Hypotension with Syncope.—Two cases are reported by Ghrist and Brown. The essential disturbances in this disease are the lack of resistance in the splanchnic vessels to shifts in the blood mass and absent or diminished vagus regulation of the heart rate to changes in the blood pressure. The opinion is advanced that this disease represents a hypotonic state of the myoneural structures of the sympathetic and parasympathetic nervous system of unknown origin. The successful treatment by ephedrine, 25 mg. by mouth, hourly, for nine doses, allows the hope in one case that this drug exercises a specific alleviative effect on the disease.

Total Thyroidectomy in Thyrotoxicosis.—Twenty-two cases form the basis of the report made by Gilman and Kay. All of the patients had been incapacitated for some time from useful pursuits. Ten of them had been receiving continuous

medical care from one to eight years. Eight of the twenty-two had been given numerous roentgen-ray treatments, two of them as many as sixty, and a number of them had been considered poor surgical risks and had come to be regarded as incurable. Prior to the operation, all were told of what was contemplated and that it would be necessary for them to take daily a certain amount of thyroid extract for the remainder of their lives. In preparing them for the operative ordeal, relief of dehydration, the taking of a high caloric diet, and the administration of iodine were regarded as of the greatest importance. Patients exhibiting cardiac decompensation with or without auricular fibrillation were digitalized, but apart from this, digitalization was not made a routine procedure. In only one of them was any preliminary ligation operation performed. The operation, as a rule, consisted in removing the thyroid gland as completely as possible, care being taken to prevent injury to the parathyroid bodies and to the recurrent laryngeal nerves by either shaving the posterior portion of each lateral lobe as close as possible to the capsule, or stripping the capsule from the posterior surface of the lobe. A careful search was made in every case for an existing pyramidal lobe and this, if found, was removed. In all the cases, the operations were performed with the patient under light nitrous oxide and oxygen anesthesia and both sides of the neck were blocked by injecting 0.5 per cent procaine hydrochloride solution previous to making the incision. While in many cases the proper balance is readily obtained by giving thyroid extract, in some cases considerably more time is necessary, even as long an interval as six months, before the proper dosage and balance is arrived at. During the period of adjustment, however, these patients are in no way incapacitated. The results obtained lead the authors to believe that in selected cases of thyrotoxicosis at least, a total thyroidectomy is indicated, as they believe that the entire gland is diseased. In all cases requiring operation, a much larger amount of thyroid gland should be removed than has been customary.

Thyroid Medication Causes Stammering.—Five cases of childhood myxedema and hypothyroidism are reported by Gordon in which stammering occurred during the course of thyroid treatment. The untoward symptoms produced by thyroid medication are essentially those of an acute thyroiditis and are generally disturbances of the central nervous, gastro-intestinal and cardiovascular systems. Stammering may be produced by thyroid extract and should be considered as a manifestation of a general nervous excitation following disturbance of the central nervous system. When observed during the course of thyroid treatment, it should be treated as any other toxic symptom by an immediate suspension of the medication. The administration of the thyroid should not be resumed until some time has elapsed after the disappearance of the stammering and then only in small doses.

Negative Pressure in Epidural Space.—Evidence is offered by Heldt and Moloney to show that there is normally a negative pressure in the epidural space. Spinal fluid seepage into the epidural space through perforation of the dura by a lumbar puncture needle on account of this negative pressure is probably a potent factor in the causation of lumbar puncture headache. Lumbar puncture may be simplified by withdrawing the stylet from the needle on reaching the ligamentum flavum, attaching the manometer at that point, and using the negative pressure of the epidural space for local orientation.

Treatment of Diabetes with Vitamin B.—The preparation used by Mills was made by acid-alcoholic extraction of a number of plants known to be rich in vitamin B (alfalfa, sweet clover, corn silk, onions, carrots, spinach, rice polishings and bran). Approximately 40 per cent ethyl alcohol containing 0.4 per cent hydrochloric acid was used in the extraction. The application of heat was avoided throughout the process. After the extraction was completed, sodium hydroxide was added to bring the reaction almost to the neutral point, and the protein precipitate thus formed was filtered off. In the seven cases of diabetes here reported, evidence is offered of the effect of vitamin B in lowering sugar excretion. Thirty cubic centimeters of the vitamin solution is estimated as roughly equivalent to 30 units of insulin. Without pointing to diabetes as a deficiency disease, the author believes that this therapy affords the injured pancreas an opportunity for functional recovery and might in combination with insulin give better results than either would alone. It has the added advantage of oral administration and may be taken at home by patients to whom insulin could not be entrusted.

Duodenal Flora in Achlorhydria.—The duodenal flora of forty-five persons was examined by Ricen et al. Thirty of these had an achlorhydria, and fifteen, used as controls, had either a normal or above normal content of hydrochloric acid in the stomach. Whereas the duodenal contents of the normal persons were practically sterile, those of the achlorhydric patients were rich in bacteria, many of which possessed blood-destroying properties.

Suspenders Versus Belts in Peptic Ulcer.—Einhorn is convinced that in the treatment of patients suffering from gastric or duodenal ulcer, it is of definite advantage to have the patient wear suspenders in place of a belt. Such a change is advisable not only in the treatment of ambulatory patients suffering from gastric or duodenal ulcer, but also in the post-medical treatment of those who were under the hospital care for such disturbances.

Archives of Internal Medicine, Chicago

41: 295-452 (March) 1928

*Specific Treatment of Lobar Pneumonia. R. L. Cecil, New York.—p. 295.
*Immunity to Tuberculosis. J. Heimbeck, Oslo, Norway.—p. 336.
*Agranulocytic Angina. L. K. Gundrum, Los Angeles.—p. 343.
*Studies in Asthma: II. F. M. Rackemann, Boston.—p. 346.
Experimental Anemia Produced by Clostridium Welchii: Chemical Analysis of Blood. J. A. Killian, M. B. Patterson and L. Kast, New York. —p. 370.
*Nonprotein Sulphur of Blood in Certain Pathologic Conditions. W. Denis, G. R. Herrmann and L. Reed, New Orleans.—p. 385.
*Cardiotachometer. E. P. Boas, New York.—p. 403.
Plasma and Corpuscular Chlorides in Peptic Ulcer. L. Bloch and A. M. Serby, Chicago.—p. 415.
Effect of Toxemia on Tolerance for Dextrose and on Action of Insulin. J. S. Sweeney, Dallas, Texas.—p. 420.
Icterum Index: Spectrophotometric and Quantitative Studies. C. Cutten, E. E. Emerson and W. Woodruff, Rochester, N. Y.—p. 428.
*Urinary Proteins not Originating in Blood. W. A. Thomas, K. W. Schlegel and E. Andrews, Chicago.—p. 445.

Specific Treatment of Lobar Pneumonia.—Evidence is submitted by Cecil that antipneumococcus serum and its derivatives, when administered under the proper conditions, are capable of exerting a definite influence on the course of pneumococcus type I and type II pneumonia. A specific therapy for these two types of pneumonia is, therefore, theoretically sound. The practical application of the specific treatment of pneumonia is still handicapped, however, by certain defects in the serum itself or in the derivatives from it. Whatever the serum or serum derivative used, the necessity of early and adequate treatment cannot be too strongly emphasized. The value of large doses of serum is stressed.

Immunity to Tuberculosis.—Since 1924, Pirquet's tuberculin test has been made on the girls entering the nurses' training school of the Municipal Hospital of Oslo. With few exceptions, the nurses were between the ages of 20 to 25, and all were in good health. Of 420 girls tested, 52 per cent gave a negative reaction and 48 per cent gave a positive reaction. Extensive investigations have also been made among the children in the public schools of Oslo. These have shown that at the age of 9 about 85 per cent of the children gave a positive reaction to the Pirquet test. In the country districts, the number of positive reactions was less. Most of the material for the nurses' training school comes from the cities. Seventy-nine medical students were examined prior to their entrance into hospitals and 222 military recruits were also examined; 47 per cent of the medical students gave a negative reaction to the Pirquet test and 53 per cent gave a positive reaction; 55 per cent of the military recruits gave a negative reaction and 45 per cent gave a positive reaction. The old opinion relative to the frequency of the positive Pirquet test in adult life seems to be wrong. There are two outstanding facts: (1) In late childhood and youth there are nearly 100 per cent positive reactions; (2) the positive

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reactions fall to nearly 50 per cent at the age of 20. This must mean that the reaction to the Pirquet test has changed in about 50 per cent of the earlier positive cases. The infection itself, the prime condition for the reaction, is lacking. Tuberculous infection can rapidly or slowly kill or be killed by the organism. The latter fate has befallen the infection among the nurses who gave a negative reaction to the Pirquet test. They were infected in childhood and gave a positive reaction to the test, but the organism has little by little conquered the infection, and between the ages of 20 and 25 the infection has burned out; the positive reaction to the Pirquet test caused by the childhood infection has disappeared, and they are again virgin soil for a new infection, just as they were when they were born. Heimbeck has succeeded in obtaining a positive reaction to the Pirquet test by using the avirulent tubercle bacilli (Bacillé-Billie-Calmette—Guérin). This is in agreement with Koch's theory of immunity to tuberculosis; namely, that as long as a person is infected with it, he cannot acquire a new infection. Because the B C G bacillus infection seems to induce resistance or immunity to tuberculosis, Heimbeck began to use it on nurses who gave a negative reaction to the Pirquet test and who were supposed to be in the same receptive state to tuberculous infection as new-born children. Subcutaneous inoculation was used. Five-hundredths milligram is the most suitable dosage, as this produces a local reaction, an infiltration which signifies that the organism really has reacted to the inoculation. This method has been used in about forty cases. All those who were inoculated gave a positive reaction to the Pirquet test. The time elapsing between the inoculation and the appearance of the reaction has ranged from eleven days (a boy, aged 4, given a dose of 0.2 mg.) to eight weeks, averaging from about four to six weeks. The preliminary experience with those inoculated seems to show that inoculation coincidentally produces some resistance and immunity to virulent tubercle bacilli.

Agranulocytic Angina.—Gundrum's patient gave a history of two previous attacks. Tests for the usual pathogenic throat germs were negative. The leukocyte count was 310. Treatment apparently did not have any effect on the condition. The first three days the throat was treated daily with a 25 per cent silver nitrate solution and 10 per cent mercurochrome-220 soluble, every three hours. During the last three days, a mouth wash of 70 per cent alcohol was used every three hours. A blood transfusion of 500 cc. was given, but a reaction did not occur. The patient died. A necropsy was done. A mild, cloudy swelling of the viscera was present. The bone marrow was normal. A pure culture of *B. coli-communis* was obtained from heart's blood and from the cervical lymph nodes; the organism was probably an agonal invader. Cultures from the throat after death showed the same flora as before.

Etiology of Asthma.—The evidence submitted by Rackemann fails to suggest any definite explanation of the asthmatic state, except that the basis is immunologic rather than physiologic or anatomic.

Studies on Nonprotein Sulphur of Blood.—Analyses were made by Denis et al. to determine the distribution of the nonprotein sulphur fractions of the blood in whole blood and in plasma obtained from a series of cases representing various pathologic conditions of the kidneys, heart and liver. The results obtained would seem to indicate that while in normal persons the inorganic sulphate fraction is present only in plasma, in patients with nephritis who show retention of sulphate the inorganic sulphate content of the whole blood rises more rapidly than does the concentration of this fraction in the plasma, indicating diffusion and storage of this constituent in the corpuscles. There does not appear to be any direct relation between the retention of nonprotein nitrogen and inorganic sulphate, or between the latter, the neutral sulphur fraction or the chlorides.

Cardiotachometer.—An instrument which has been named the "cardiotachometer" is described by Boas; it is actuated by the action current of the heart, and records automatically the totality of heart beats over long periods of time.

Urinary Proteins Foreign to Blood.—Experiments made by Thomas et al. demonstrate clearly that in the early stages of albuminuria a protein foreign to the blood proteins is excreted, and that after a short time the renal epithelium is rendered permeable to normal serum proteins.

Archives of Neurology and Psychiatry, Chicago

19: 377-572 (March) 1928

Thalmic and Parkinsonian Types of Infundibular Tumors: Occurrence of Glycoregulatory and So-Called Endocrine Disorders. L. Van Bogaert, Antwerp, Belgium.—p. 377.
Pineal Pathology. G. Herrax and P. Bailey, Boston.—p. 394.
Malignant Chordoma of Lumbar Region. C. Davison, Pittsburgh, and A. Weil, New York.—p. 415.
*Localization in Animals of Streptococci from Cases of Epidemic Hiccup, Encephalitis, Spasmodic Torticollis and Chorea. E. C. Rosenow, Rochester, Minn.—p. 424.
Tumor of Brain with Widespread Metastases: Two Cases. E. P. Pendergrass and D. L. Wilbur, Philadelphia.—p. 437.
*Cholesteatoma of Brain of Unusual Size. F. A. Kay and G. T. Pack, Tuscaloosa, Ala.—p. 446.
Measurement of Cerebral and Cerebellar Surfaces: III. Problems Encountered in Measuring Cerebral Cortical Surface in Man. W. M. Kraus, New York, C. Davison, Pittsburgh, and A. Weil, New York.—p. 454.
Influence of Malarial Treatment on Spinal Fluid in General Paralysis. H. A. Bunker, Jr., New York.—p. 478.
*Electrical Skin Resistance: Diurnal and Daily Variations in Psychopathic and in Normal Persons. C. P. Richter, Baltimore.—p. 488.
Tumors of Posterior Cranial Fossa: Homolateral and Contralateral Pyramidal Tract Signs. E. M. Gould, New York.—p. 509.
*Sympathetic Irritation in Case of Actinomycosis. R. M. Brickner and A. P. Zemansky, Jr., New York.—p. 515.

Localization in Animals of Streptococci from Clinical Cases.—Experimental infection of animals with material from foci of infection or the throats of patients suffering from various diseases of the nervous system is reported by Rosenow. The results corroborate and extend former observations. The streptococci isolated in each of these conditions, while much alike, possess very different localizing and symptom-producing power when injected intracerebrally into animals and readily lose this property, especially on aerobic cultivation. The specific localizing power of the streptococcus, it would seem, is dependent, in part at least, on the production of a toxin or poison that has specific effects. Lethargy, hyperpnea with marked arrhythmia, and the symptoms characteristic of spasmodic torticollis have been produced with filtrates from nasopharyngeal washings, filtrates of suspensions of pus from tonsils and filtrates of old cultures of the specific streptococcus in each of these conditions. The fact that the streptococcus, having specific effects and the power to produce a specific poison, has been isolated long after onset indicates that the late manifestations of encephalitis and allied conditions are not sequels but are due to the activity of the causative organisms or its toxin, as has been especially emphasized by Freeman.

Large Cholesteatoma of Brain.—The weight of the tumor alone in the case reported by Kay and Pack was 69.5 Gm. The dimensions of the tumor were 4 by 5.5 by 8 cm. The tumor occupied the posterior cranial fossa, distorting, compressing and displacing the nerve tissues. It pressed on many of the cranial nerves as they emerged from the brain stem. The exterior of the tumor had the luster of mother-of-pearl. The inner part was yellowish or brownish, resembling sebum, had a caseous feel and possessed a peculiar characteristic odor. The cause of this internal change was a fatty degeneration.

Electrical Skin Resistance.—The electrical skin resistance was measured by Richter in twenty-six normal persons and in sixty-six psychopathic patients. The normal subjects gave records which remained fairly constant. Many of the patients presented records with large individual differences and at the same time great variation from the normal. These patients were all either catatonic or schizophrenic. The schizophrenic patients with marked feelings of passivity deviated to one extreme; those of the active or paranoid reaction type deviated to the other. The records from manic-depressive and hysterical patients deviated slightly, but were still within the limits of normal variation.

Sympathetic Irritation in Case of Actinomycosis.—A case of actinomycosis of the right lung and right posterior chest

wall is described by Brickner and Zemansky, in which disturbance of function of the thoracic sympathetic chain occurred, including the right side of the face and neck, the entire upper right extremity and the right side of the chest down to the twelfth rib. The midline and the line of the twelfth rib formed sharp boundaries. The sympathetic changes were indicated by localized hyperhidrosis, appearance of goose-flesh, pilo-erection and unilateral nipple erection, and exaggerated response to the drawing of a pin across the right side of the front of the chest, a lowering of the temperature, with pallor of the right hand as compared with the left, and bizarre responses of the upper right extremity to extensive changes in temperature. In a general way, the reactions of the right arm and hand were the opposite of those of the left. No differences between the right and the left upper extremities were observed in blood pressure, growth or condition of the hair or nails, or reactivity of muscles or nerves to electrical stimulation, or to epinephrine.

Archives of Pathology, Chicago

5: 365-563 (March) 1928

*Relation of Arteriosclerosis of Cerebral Vessels to Hypertension: Distribution of Arteries Supplying Pons and Medulla. O. I. Cutler, San Francisco.—p. 365.
Reaction to Oils and Fats in Lung. H. Pinkerton, Boston.—p. 380.
*Embryonal Carcinoma of Ovary. E. S. L'Esperance, New York.—p. 402.
*Effect of Pilocarpine and Epinephrine in Production of Specific Lesions in Stomach of Rabbits. F. P. Underhill and J. M. Freiheit, New Haven, Conn.—p. 411.
*Toxic Anemia Produced by Clostridium Welchii. M. B. Patterson and L. Kast, New York.—p. 429.
Microprecipitation Test for Syphilis. M. G. Peterman, Milwaukee.—p. 445.
Modification of Peroxide Reaction with Sodium Nitroprusside and Benzidine. M. M. Strumia, Philadelphia.—p. 447.
Pathologic Anatomy of Influenza: German Sources. F. Lucksch, Prague, Czechoslovakia.—p. 448.

Arteries of Pons and Medulla; Arteriosclerosis.—A description is given by Cutler of the normal distribution of the arteries in the substance of the pons and of the medulla. Examination of the medulla in eighteen cases of hypertension showed slight to moderately severe sclerosis of the arteries in eight. The most marked sclerosis of these vessels was noted in patients with cerebral hemorrhage. In all of these, the systolic blood pressure had been over 200. Specimens of the pons and medulla which were injected did not show noticeable tortuosity or narrowing or irregularity of the lumen of the arteries in brains showing sclerosis of the vessels in these parts. If the high blood pressure is due to a lack of blood supply to the vasomotor center, it is evident from the studies that this abnormal condition is not caused by any demonstrable anatomic changes in the arteries of this region.

Embryonal Carcinoma of Ovary.—L'Esperance reports six cases. He emphasizes the resemblance in histologic structure, gross anatomy and clinical course which exists between this indefinitely classified group of tumors of the ovary and the teratoid embryonal carcinomas of the testis. L'Esperance also demonstrates a similar histogenesis and therefore a teratoid origin for many of the solid carcinomas of the ovary in young persons.

Effect of Injection of Pilocarpine on Stomach.—Pilocarpine injected subcutaneously into rabbits in toxic doses will produce lesions of the mucous membrane of the stomach and, occasionally, of the first portion of the duodenum, but according to Underhill and Freiheit, this action is not specific, but is a species peculiarity.

Experimental Toxic Anemia.—By means of injections of whole culture or of toxic filtrate of *Clostridium welchii*, Patterson and Kast have produced in rabbits a chronic fatal megaloblastic anemia comparable to pernicious anemia in man.

Arkansas Medical Society Journal, Little Rock

24: 189-202 (March) 1928

Pericardium. S. F. Hoge, Little Rock.—p. 189.
Outbreak of Pellagra in Arkansas in 1927. H. S. Thatcher, Little Rock.—p. 193.

California and Western Medicine, San Francisco

28: 291-434 (March) 1928

*Immunity Phenomena in Tuberculosis. F. Eberson, San Francisco.—p. 323.
*Exercises for School Children with Heart Disease. S. Lokrantz, Los Angeles.—p. 328.
*Indication for Blood Transfusions. L. Brooks, San Francisco.—p. 331.
*Coronary Artery Disease: Electrocardiographic Study. P. Berman and V. R. Mason, Los Angeles.—p. 334.
Hallux Valgus: Cases. M. C. Mensor, San Francisco.—p. 341.
Bladder Tumors. J. C. Negley, Los Angeles.—p. 345.
*Intracranial Hemorrhage in New-Born. M. H. Silverberg, San Francisco.—p. 349.
*Van Den Bergh Test and Icterus Index. G. Segall and M. C. Terry, Los Angeles.—p. 352.
*Lipiodol in Pulmonary Suppurations. E. R. Ware, Los Angeles.—p. 356.
Sinus Suppurations: Surgical Treatment. J. F. Friesen, Los Angeles.—p. 360.
Syphilis: Nonspecific Treatment. M. T. R. Maynard, San Jose, Calif.—p. 363.
Lure of Medical History: Boerhaave. J. Oliver, San Francisco.—p. 365.
Myeloma. K. S. Davis, Los Angeles.—p. 366.
Streptothrix Meningitis: Case. B. S. Thomas, Sacramento, Calif.—p. 368.

Immunity Phenomena in Tuberculosis.—The immunity phenomena in tuberculosis, Eberson believes, seem to give an adequate explanation of the various clinical aspects of the disease. An understanding of these phenomena ought to guide our future investigations. From present knowledge the most promising leads suggest that attention might well be directed to phases of investigation related to a combined antitoxic and antibacterial immunity. Too much emphasis cannot be laid on the importance of correlating experimental laboratory investigations with clinical data, so that the results may become intelligible and give a broader understanding of the problem as a whole. From the point of view of ordinary present-day treatment, the immunologic factors should serve as guides. Certainly a fibrotic, productive form of pulmonary tuberculosis must be managed differently from an exudative type.

Exercises for School Children with Heart Disease.—Arrangements have been made in the city schools of Los Angeles so that children suffering with heart disease may come late to class. Sometimes the rest periods are very short, and it would be difficult for them to reach the classroom without hurry. In most schools they are given an opportunity for rest in the middle of the day, on the recommendation of the family physician, the school physician, or the consulting board. In regard to foci of infection, Lokrantz states that provision for eradication of foci has been made, through inspections by school physicians and nurses, who report their observations to the parents, to be transmitted to the family physician.

Blood Transfusion.—The more frequent use of blood transfusions is urged by Brooks. In his opinion there is a lack of appreciation by some members of the profession of the results obtained by the judicious use of blood. There are others who are unduly afraid of transfusion because they have seen or heard of some untoward reaction. Practically all such reactions are due to poor technic either in the grouping and cross-agglutination tests, or in making the transfer of blood from the donor to the recipient.

Electrocardiography in Coronary Artery Disease.—The high degree of specificity of the coronary T wave in the diagnosis of disease of the coronary arteries has been confirmed by Berman and Mason as the result of study of fifty-four case histories, electrocardiograms and necropsy reports. In each instance in which postmortem studies were made of a heart which had produced this wave, occlusion of the left coronary artery or one of its branches was found. The presence of a coronary T wave in nine cases of syphilitic aortitis has been demonstrated. Two examples of proved and two of probable embolism of the coronary artery are reported.

Intracranial Hemorrhage in New-Born.—Of the six cases reported by Silverberg, three terminated fatally. Mother's whole blood was injected intramuscularly in each of the six cases.

Value of Liver Function Tests.—A series of forty-six cases is reported by Segall and Terry comprising (1) obstructive

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visible jaundice, in which the van den Bergh test and the icterus index agreed; (2) latent jaundice cases, in which the two tests agreed; (3) pernicious anemia cases, showing the same agreement; (4) a variety of clinical cases, in some of which the two tests did not agree.

Iodized Oil in Pulmonary Suppurations.—Ware reports good results from the use of iodized oil in the treatment of pulmonary suppurations, especially bronchiectasis. He has not seen any serious results following its use. In one case a cavity which was filled with iodized oil was thought to be nontuberculous. Following injection tubercle bacilli appeared in the sputum. None had been found previously. In well established lung abscesses of considerable size there can probably be very little therapeutic result; however, it is evident that it is of undoubted value in cases of multiple bronchial dilatations which are not too extensive.

Florida Medical Association Journal, Jacksonville

14: 433-488 (March) 1928

Jaundice. E. W. Bitzer, Tampa.—p. 445.
Cervical Cesarean Section. F. Thorpe, Tampa.—p. 447.
Fracture of Spinal Vertebrae: Reduction by Suspension. Two Cases. A. M. Bidwell, Tampa.—p. 450.
Pathogenic Significance of Calcium Insufficiency. C. F. Arroyo, Tampa. —p. 453.
Physical Therapy. E. F. Carter, Tampa.—p. 456.
Acute Diffuse Glossitis. D. A. McKinnon, Marianna.—p. 463.

Indiana State M. Association Journal, Fort Wayne

21: 89-136 (March) 1928

Nasal Accessory Sinuses and General Practitioner. W. Mithoefer, Cincinnati.—p. 89.
Infections Treated with Bacteriophage and Antivirus Filtrates. T. B. Rice, Indianapolis.—p. 93.
Coronary Arterial Disease. F. A. Willius, Rochester, Minn.—p. 97.
Medical South America. F. E. Wiedemann, Terre Haute.—p. 102.

Iowa State M. Society Journal, Des Moines

18: 77-112 (March) 1928

Diagnosis and Treatment of Sterility. N. F. Miller, Iowa City.—p. 77.
Otitis Media in Childhood. J. V. Treynor, Council Bluffs.—p. 82.
Reduction of Mortality Rate in Benign Prostatic Hypertrophy. V. C. Hunt, Rochester, Minn.—p. 86.
Radical Maxillary Sinus Operation and After-Treatment. R. F. French, Marshalltown.—p. 89.
Lessening the Surgical Risk. W. E. McCrary, Lake City.—p. 92.
Chronic Nonsuppurative Osteomyelitis, Garre Type: Case. J. C. Shellito, Independence.—p. 95.

Journal of Industrial Hygiene, Baltimore

10: 73-100 (March) 1928

*Chronic Benzene Poisoning Among Women Industrial Workers. A. R. Smith, New York.—p. 73.
Physiology of Industrial Hygiene: II. Physiologic Effects of Exercise and Mental Effort on Circulation and Their Relation to Industry. R. J. S. McDowall, London.—p. 94.

Chronic Benzene Poisoning.—Of the six factories whose women employees were studied by Smith, one manufactured tires and rubber goods; one, cameras; one, shoes; and three, sanitary tin cans. Benzene produced chronic poisoning in virtually one out of every three women. The risk of poisoning was not limited to those who worked directly with benzene, but workers who were indirectly exposed through merely working in rooms where benzene was used were also subject to its effect. Among women who did not show definite signs of poisoning, more than a third suffered from symptoms, many of which in all probability were caused by exposure to benzene. Susceptibility to benzene poisoning appeared about equally marked among young and older workers. The commonest symptoms accompanying blood changes indicative of early chronic poisoning among the women examined were headache, excessive fatigue, dizziness, nausea, loss of appetite, weakness, nervousness, and disturbances of sensation, such as numbness and tingling in the extremities. Frequent urination, nosebleeds, disturbed sleep, and indigestion occurred in about 13 per cent of the cases; menstrual irregularities, in about 10 per cent. The blood showed in addition to leukopenia and a tendency toward a diminution in the polymorphonuclear leukocytes—the commonly accepted criteria of chronic benzene poisoning—a tendency toward a slight increase in basophils, as well as an increase in the endotheliocytes and the presence of myelocytes in a noteworthy number of cases. Reports were obtained of three cases which had advanced to the point of hospitalization. Two of these were fatal.

Journal of Laboratory & Clinical Medicine, St. Louis

13: 511-612 (March) 1928

Relation of Clinical Pathology to Preclinical Medicine. W. G. Exton, Newark, N. J.—p. 511.
*Orris Root as Etiologic Factor in Hay-Fever and Asthma. R. M. Balyeat, Oklahoma City.—p. 516.
Relationship of Foci of Infection to Certain Organic Lesions. A. S. Giordano, South Bend, Ind.—p. 523.
*Occurrence of Lipoids in Urine: Diagnostic Importance. E. L. Miloslavich, Milwaukee.—p. 542.
Incidence of Various Species of Bacteria in Spinal Fluids from Cases of Meningitis. R. Gilbert and M. B. Coleman, Albany, N. Y.—p. 547.
New and Rapid Method of Examining Tissue Microscopically for Malignancy. B. T. Terry, Nashville, Tenn.—p. 550.
Accuracy and Precision in Clinical Pathology. P. V. Wells, Newark, N. J.—p. 565.
Systematic Search for Pathogenic Intestinal Organisms in Discharges of Healthy and Sick Individuals. L. B. Bibb, Washington, D. C.—p. 575.
Simplification of Technic for Wassermann Test. L. H. Cornwall, D. Groszberg and B. C. Taylor, New York.—p. 580.
Antigen for Use in Serum Tests for Syphilis. B. S. Kline, Cleveland. —p. 588.

Orris Root as Cause of Asthma and Hay-Fever.—Balyeat shows that a not inconsiderable number of patients with hay-fever and asthma react to orris root, and establishes an etiologic relationship between face powders containing orris root and these two diseases. Orris root is used rather extensively in the manufacture of a large percentage of face powders, face packs, astringent packs, cleansing powders and creams, scented talcs, bath powders and salts, scented tooth powders and soaps, and the orris oil is used extensively in preparing most synthetic perfumes and soaps. The skins of orris root sensitive patients are sensitive to most of the scented cosmetics, which is excellent evidence that orris root is present in them. The process of desensitizing is similar to the one used in desensitizing patients who are sensitive to pollen. Orris root sensitive patients who complained of frequent colds in the winter, who received specific orris root therapy, usually reported freedom from winter colds.

Significance of Lipoids in Urine.—Lipoiduria, the occurrence of double refracting fat substances in urine, is said by Miloslavich to occur in (1) lipoid nephrosis of unknown origin (genuine lipoid nephrosis); (2) lipoid nephrosis of syphilitic etiology (secondary stage of syphilis); (3) subacute and chronic glomerulonephritis (combination forms of nephritis and nephrosis); (4) amyloid nephrosis with edema; (5) Grawitz tumor (so-called hypernephroma) of the kidney, and (6) lipoid carcinoma of the prostate. Miloslavich urges the practical importance of the examination of the urinary sediments with a polarizing microscope for clinical diagnostic purposes, and recommends it as a routine procedure for every pathologic urine.

Kansas Medical Society Journal, Topeka

28: 73-108 (March) 1928

Diagnosis of Thrombo-Angiitis Obliterans. L. V. Hill, Kansas City.—p. 73.
Safety in Surgery. C. S. Newman, Pittsburgh, Kan.—p. 78.
Syphilis of Stomach. E. H. Terrill, Wichita.—p. 82.
Shall State Dues Be Raised? J. T. Scott, St. John.—p. 86.
Examination of Material for Gonococcus. M. Dupray, Hutchinson.—p. 90.
Early Diagnosis of Tuberculosis. H. E. Kleinschmidt, New York.—p. 92.
Horseshoe Kidney: Case. N. F. Ockerblad, Kansas City.—p. 94.

Kentucky Medical Journal, Bowling Green

26: 101-176 (March) 1928

Probable Etiologic Relationship Between Peptic Ulcer and Vagatonic Syndromes. V. E. Simpson, Louisville.—p. 105.
Liver Diet in Pernicious Anemia. C. N. Kavanaugh, Lexington.—p. 123.
Bleeding Uterus. J. B. Lukins, Louisville.—p. 125.
Hyperthyroidism and Myocarditis. W. O. Johnson, Louisville.—p. 132.
Classification of Heart Disease. J. Harvey, Lexington.—p. 141.
Digitalis Therapy. R. E. Smith, Henderson.—p. 146.
Management of Diabetic in Home. W. A. Jenkins, Louisville.—p. 151.
Feeding Sick Infant. J. W. Bruce, Louisville.—p. 160.
Syphilis of Heart. J. R. Morrison, C. McNeill and H. V. Noland, Louisville—p 164
Unusual Cardiac Death M. Flexner, Louisville.—p. 169.
Carcinoma Recti. L. W. Frank, Louisville.—p. 170.

Medical Journal and Record, New York

127: 233-288 (March 7) 1928

Medication and Equilibrium of Life. E. McDonald, Philadelphia.—p. 233.
Roentgen-Ray and Radium Treatment of Uterine Fibroids and Hypertrophied Prostates. H. B. Philips, New York.—p. 238.
Radiation Therapy at Bellevue Hospital. I. I. Kaplan, New York.—p. 242.
Reparative Surgery of Face. J. E. Sheehan, New York.—p. 245.
*Marked Elevation of Diaphragm. J. Buckstein, New York.—p. 246.
Meaning of Jaundice. M. Golob, New York.—p. 248.
Social Hygiene. W. R. Riddell, Toronto.—p. 250.
Simplified and More Accurate Method of Performing Heller's Test for Albumin in Urine. A. Woldert, Tyler, Texas.—p. 251.
New Appliance for Colon Irrigation. E. Hollander, New York.—p. 252.
Stool Observations for Practitioner. H. J. Bartle, Philadelphia.—p. 253.
*Retroperitoneal Cyst: Apparently of Intestinal Origin. A. A. Salvin, New York.—p. 256.
Constructing Permanent Colostomy. C. J. Drueck, Chicago.—p. 259.
Diagnostic Difficulties of Appendical Abscess. A. Stein, New York.—p. 260.
Gastric Ulcer. J. W. Shuman, Los Angeles.—p. 262.
Diagnosis of Epigastric Hernia: Case. J. L. Tracy, Toledo, Ohio.—p. 264.
In Defence of Stomach Tube. M. S. Shaine, New York.—p. 265.
Early Symptoms of Gallbladder Disease. S. L. Immerman, Philadelphia.—p. 266.
Arab Science: II. Petrarch's Reaction to It. J. Wright, Pleasantville, N. Y.—p. 269.
Medicine and Surgery of Lewis and Clark Expedition. L. L. Stanley, San Quentin, Calif.—p. 275.

Marked Elevation of Diaphragm.—Buckstein states that a survey of 20,000 roentgen-ray examinations of the gastrointestinal tract reveals three main causes for marked elevation of the diaphragm: eventration, upward displacement by tumor formation and subdiaphragmatic abscess. An example of the latter was in a patient with a history of several years' duration of epigastric pain related to food. Two months prior to examination, the patient experienced a sudden, stabbing pain in the epigastrium, since which time the distress became continuous, and very severe. Roentgenographic examination of the abdomen revealed the presence of a duodenal deformity characteristic of duodenal ulcer, and a marked elevation of the right side of the diaphragm, apparently as a result of a pyopneumoperitoneum. From a consideration of the various factors, it is Buckstein's opinion that this latter condition was secondary to previous perforation of the duodenal ulcer. The patient died without surgical intervention.

Developmental Retroperitoneal Cyst.—A case of true developmental retroperitoneal cyst, of a rare enterogenous type, is reported by Salvin. The only symptom was the gradual appearance of a painless, fluctuating mass in the left side of the abdomen, which reached a size a little larger than a fetal head at the time of operation. The cyst was shelled out with great ease and very little bleeding. It proved to be a tense, fluctuating, oval, yellowish, semitranslucent, thin walled, unilocular cyst, measuring 15 by 10 by 8 cm. The distinguishing feature of the cyst wall on histologic examination was a single layer of high cylindric epithelial cells resting on a fibrous basement membrane. The character of the epithelium was strikingly similar to that found in the small intestine, and it is believed that the anlage of the cyst was a fetal rest separated from the main mass of enteric tissue during the process of embryonic differentiation.

New England Journal of Medicine, Boston

198: 117-168 (March 8) 1928

*Carcinoma of Prostate and Bladder. B. S. Barringer, New York.—p. 117.
Pyelonephritis with Urinary Calculi and Carcinoma of Bladder Following Prostatic Obstruction: Two Autopsy Reports. B. D. Wetherell, Boston.—p. 122.
*Pathology of Renal Pelvis in Essential Hematuria. B. C. Wheeler, Boston.—p. 123.
*Tumors of Kidney. V. Vermooten, Boston.—p. 125.
Duplication of Renal Pelvis, with Massive Hydronephrosis in Boy of Six. W. D. Bieberbach, Worcester, Mass.—p. 130.
Diphtheria Epidemic—Marlborough—August-November, 1927. E. A. Lane, Boston.—p. 135.
Functional Results After Prostatectomy. C. S. Swan, Boston.—p. 137.
Grass in Urinary Bladder. V. Vermooten, Boston.—p. 139.

Carcinoma of Prostate and Bladder.—Barringer classifies 202 consecutive cases of carcinoma of the prostate as to the duration of life after examination and treatment. These 202 patients were of all kinds—those about to die; many in a postoperative condition; four with one or both legs swollen from the pressure exerted by carcinomatous glands on the common iliac vein; a few with very extensive bone metastases; many in whom there was secondary carcinoma of the bladder; some showing carcinomatous signal nodes in the left supraclavicular space, and some with large suprapubic tumors, these generally occurring after an attempt at prostatectomy. Fifteen patients were alive after more than three years; six after four years; six after five years; three after seven years. Therefore, only thirty patients (15 per cent) had any reasonable length of life after the first examination and only a moderately small number of those with extensive prostatic carcinoma were benefited by any treatment. Barringer stresses the futility of doing major operations as a routine on patients with extensive carcinoma of the prostate. It has been his habit to do a modified punch operation on such patients. Of twenty patients with papillary carcinoma of the bladder, fifteen are still cancer free, eleven having gone more than five years. Of fifty-one with infiltrating carcinoma, eighteen are cancer free, twelve having gone more than five years. These cases include all those in which the carcinoma was small enough to be controlled intravesically, and all those in which a suprapubic operation was performed and radium implanted. In this last class, no patients have been refused operation if the carcinoma was thought to be confined to the bladder. Many of the infiltrating cases have been very extensive, and most of them have involved the bladder base. In all, ninety-four suprapubic operations have been done in ninety cases. The mortality was slightly over 3 per cent.

Pathology of Renal Pelvis in Essential Hematuria.—In the case reported by Wheeler, all the evidence obtainable pointed to the right kidney as being the seat of the hemorrhage. It was removed. On section, the architecture was clear, and there were no cortical hemorrhages. The pelvis was normal throughout except for one papilla. The tip of this, about the size of the head of a black pin, consisted of a raised, granular, reddish material, from which blood oozed on pressure from above. All the other papillae were normal. Microscopically, the abnormal conditions were practically limited to the region of this one papilla. Dilated, thin-walled capillaries and veins were present in large numbers close beneath the pelvic epithelium at the tip of the pyramid, and there were numerous extravasations of blood cells into the submucosa and peripelvic fat. In some places there was absence of the endothelium of the capillaries, and in one spot rupture of the pelvic epithelium. With the blood there was also a considerable chronic inflammatory infiltration with round cells, particularly into the fat. This was present, to a less extent, in a section through the adjacent papilla.

Tumors of Kidney.—The first of the three conditions reported by Vermooten was a very rapidly growing fibrosarcoma of the kidney occurring in a man, aged 34. The second patient was aged 70. She had apparently had a five-year cure of a nephroma and had recently returned with a second malignant tumor of the urinary tract in the form of a malignant papilloma of the bladder. The third tumor, also a nephroma, occurred in a girl only 16 years of age.

New York State J. Medicine, New York

28: 303-364 (March 15) 1928

Cosmetics and Dermatoses. L. K. McCafferty and S. Genovese, New York.—p. 303.
Smallpox and Chickenpox: Differential Diagnosis. F. W. Laidlaw, Middletown.—p. 310.
Occupational Disorders of New York Public School Child. W. Rosenson, New York.—p. 313.
*Arterial Hypertension: Treatment. S. A. Vogel, Buffalo.—p. 318.
*Acute Appendicitis in Children Under Twelve. C. W. Woodall, Schenectady.—p. 322.
Pelvis Tumors Complicating Pregnancy: Two Cases with Normal Delivery Following Extirpation of Growth in Sixth Month. A. Stein, New York.—p. 325.
Cancer Situation in State of New York. J. M. Swan, Rochester, N. Y.—p. 327.
Oral Conditions in Patients Admitted to State Hospital. R. E. Clogher, Utica.—p. 329.

Salt-Free Diet in Hypertension.—Vogel summarizes the results in 212 cases of hypertension treated by a salt-free diet, which means not merely the removal of salt from the table, but the most rigid elimination of salt from the diet by the use of food having a low chloride content and by special preparation of the food. The patient's fidelity to

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such a diet depends largely on the knowledge and imagination of the dietitian or cook in substituting various seasonings to replace the salt. It is important for a patient to begin treatment in an institution with the requisite dietary and laboratory facilities for obtaining the best initial results and for giving instruction in continuing the treatment at home. Of the patients treated, 156 were demonstrably improved. Among the fifty-five that did not improve, the greatest number were among the hypertensive with nephritis (nineteen of the thirty-six).

Acute Appendicitis in Children.—In the series of 295 cases reported on by Woodall, there were twenty-two deaths, or 7.45 per cent. Eleven children who were given the Ochsner treatment recovered without operation. Two hundred and sixty-two children were operated on with recovery. In 155 cases, more than thirty-six hours had passed before surgical aid was sought. More than a fourth of all these cases, or 27.8 per cent, were referred to the surgeon after sixty hours. One death occurred in a patient seen within twelve hours of the onset of the disease; three occurred in patients seen within twenty-four hours; one within thirty-six hours; three within forty-eight hours; seven within seventy-two hours, and seven after seventy-two hours. Among the twenty-two patients who died were seven who had not been operated on but were put on the Ochsner treatment. One of these had been sick only forty-eight hours before admission to the hospital. She died nine days later from general peritonitis and septicemia. In looking at these twenty-two deaths in retrospect it seems quite possible, says Woodall, that some of the patients might have been saved. In two cases there is a definite history that the family physician did not seek surgical aid when it first should have been sought. In one case a technical error at operation may have been the determining fatal factor, while in five cases the surgical judgment of the operator may be open to criticism.

Ohio State Medical Journal, Columbus

24: 169-248 (March) 1928

Prevention and Control of Heart Disease. W. H. Bunn, Youngstown.—p. 189.
Nasal Reconstruction by Means of Autografts and Isografts. M. Metzenbaum, Cleveland.—p. 196.
Temperature in Tuberculosis. C. O. Probst, Columbus.—p. 200.
Cesarean Operations. G. Mombach, Cincinnati.—p. 203.
Osteitis Deformans with Psychosis: Case. R. S. Moynan, Columbus.—p. 206.
Use of Diathermy in Treatment of Pneumonia. N. J. Seybold, Toledo.—p. 210.

Philippine Islands M. Association Journal, Manila

8: 1-44 (Jan.) 1928

Birth Statistics in Manila. H. Lara and J. Guidote, Manila.—p. 1.
Bilateral Cervical Ribs: Two Cases. J. Castillo and P. Lantin, Manila.—p. 4.
Immunity in Yaws. O. Schobl, Manila.—p. 6.
Microphthalmos: Case. C. D. Ayuyao, Manila.—p. 10.
Hydrocyanic Acid Gas for Control of Pests. C. M. Hasselmann, Washington, D. C.—p. 12.
Survey of Sanitation of School Buildings in Philippine Islands. R. Villafranca and T. Corpus, Manila.—p. 19.

Public Health Reports, Washington, D. C.

43: 497-549 (March 2) 1928

Infant and Maternal Mortality in United States. E. B. Sterling, Washington, D. C.—p. 497.
Malta Fever: Problem for State and Municipal Laboratories. A. V. Hardy, Des Moines.—p. 503.

43: 551-601 (March 9) 1928

Health Record of University Students as Related to Tonsillectomy. W. E. Forsythe, Ann Arbor, Mich.—p. 560.

West Virginia Medical Journal, Charleston

24: 105-156 (March) 1928

Conservative Surgical Treatment of Breast Tumors. L. L. McArthur, Chicago.—p. 105.
Technic of Uterine Suspension. C. F. Fisher, Richwood.—p. 110.
Surgery of Acute Abdominal Conditions. A. G. Rutherford, Welch.—p. 114.
Fusospirillosis of Oropharynx. W. E. Dickerson, Princeton.—p. 119.
Surgical Treatment of Pulmonary Tuberculosis. S. S. Gale, Roanoke, Va.—p. 122.
Birth Injuries and Allied Conditions. A. A. Shawkey, Charleston.—p. 125.
Relationship of Compensation Department to Hospital of State. C. L. Heaberlin, Charleston.—p. 153.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1: 335-382 (March 3) 1928

Principles of Diagnosis. R. Hutchison.—p. 335.
Rain-Bearing Winds and Early Phthisis in Derbyshire. W. Gordon and W. M. Ash.—p. 337.
*Irradiated Ergosterol as Dressing for Wounds. C. J. Bond.—p. 339.
Autogenous Residual Vaccines: Therapeutic Results Obtained in Series of 360 Cases. C. E. Jenkins.—p. 340.
*Intestinal Obstruction Due to Hairballs. C. Noon.—p. 342.
Scope of Surgery in Treatment of Chronic Rheumatoid and Osteo-Arthritis. C. M. Page.—p. 343.
Congenital Dislocation of Hip: Controlling Pelvis During Reduction. F. W. Stuart.—p. 345.
Hemihypertrophy. B. L. McFarland.—p. 345.
Polymastia. G. B. Richardson.—p. 346.
Gallstones with Acute Pancreatitis at Sixteen. B. M. Tracey.—p. 346.
*Fracture of Neck of Rib by Indirect Violence. G. Branson and J. F. Brailsford.—p. 346.

Irradiated Ergosterol as a Wound Dressing.—Bond relates his experience with irradiated ergosterol, dissolved to the saturation point (about 3.5 per cent) in liquid petrolatum, as a dressing for ulcers and granulating wounds. It is said to reduce infection and promote healthy granulations, and to stimulate the ingrowth of epithelial cells from the margin, thus favoring the healing process. Bond suggests that the beneficial effect of irradiated ergosterol, when used in solution in liquid petrolatum as a dressing for wounds, may be due to a further continued irradiation effect on the wound tissues after the primary irradiation of the sterol by the ultraviolet rays from the mercury vapor lamp has ceased. Experiments carried out by Bond suggest the conclusion, either that ergosterol when treated by ultraviolet irradiation takes up oxygen which can be subsequently liberated and is itself vitamin D, or that two substances are formed from the sterol during irradiation—one a vitamin, which does not take up and subsequently liberate oxygen, and the other a substance of a peroxide character, which does take up oxygen and gives the starch potassium iodide color reaction, and which hemolyzes the red cells. If two substances are formed, the further question arises which of these substances exercises the stimulating and healing effect on wounds. The fact that the activated substance which forms during irradiation is a fat-soluble material is of considerable importance; for, unlike a water-soluble material, a fat-soluble substance can transmit oxygen through the lipoid coatings of the cell and its nucleus, and if it is also an oxygen carrier, soluble in fats, it may exert its influence on red cells, leukocytes and tissue cells.

Intestinal Obstruction Due to Hairball.—Noon reports a case in which he removed four hairballs from the distal 2 feet of the ileum. A piece of hair was projecting from a small perforation. It was necessary to drain the intestine for a considerable time. A second operation was performed later to close the fecal leak, and this necessitated resection of a segment of small intestine, about 8 inches in length, and an end-to-end anastomosis.

Fracture of Rib by Indirect Violence.—While driving at golf, Branson and Brailsford's patient suddenly experienced a severe left lumbar pain which almost disabled him. Examination disclosed a round, soft, tender swelling, in the left lumbar region, 3 inches from the midline and 2 inches below the twelfth rib. It was unattached to the skin, and it became more pronounced and was more tender when the lumbar muscles were put into action. Support gave immediate partial relief. There was no indication of any other injury. In spite, however, of the relief given at first by strapping, and later by a broad Churton's bandage, the pain continued to cause much disability, and in course of time became more definitely centered round the area of distribution of the tenth left dorsal nerve rather than in the lumbar muscles. A roentgenogram disclosed a fracture of the neck of the tenth left rib and ostearthritis of the lumbar spine. The fracture was transverse, midway between the tubercle and the head, with very slight disturbance of alinement.

Glasgow Medical Journal

109: 225-288 (March) 1928

Acute Toxic Iritis. A. M. Ramsay.—p. 225.
Regulation of Acid-Base Balance of Body. N. Morris and S. Graham. —p. 239.
Case of Surgical Emphysema. J. S. Bizzett and W. Rankin.—p. 261.

Lancet, London

1: 535-586 (March 17) 1928

Some Problems of Nephritis. T. I. Bennett.—p. 535.
Statistical Epidemiology of Respiratory Diseases. H. M. Woods.—p. 539.
*Treatment of Internal Hemorrhoids by Injection. A. S. Morley.—p. 543.
Carbon Dioxide Thermosaline Springs in Light of Modern Research. A. Schott.—p. 546.
Attempt to Control Epidemic of Measles. D. McClean.—p. 548.
Case of Sarcosporidiosis. A. S. Naidu.—p. 549.

Treatment of Internal Hemorrhoids by Injection.—Morley describes his further experiences with the treatment of hemorrhoids by injection of a solution of phenol (carbolic acid) in equal parts of glycerin and water. He advises the use of a 5 per cent solution of phenol in almond oil, injecting it under the mucous membrane and not into the pile mass. The quantity injected into each pile is usually from 1 to 2 cc. If the injection is properly made, no bleeding follows the withdrawal of the needle. The injections are continued at intervals of from five to seven days until each pile is of parchment-like hardness from its upper extremity to the mucocutaneous junction.

1: 587-636 (March 24) 1928

Epilepsy. J. Collier.—p. 587.
Rational Use of Digitalis. B. Williamson.—p. 591.
*Chronic Appendicitis in Children. A. J. Walton.—p. 595.
*Late Results of Pulmonary Fibrosis. W. B. Wood.—p. 596.
*Medical Diathermy in Chronic Middle Ear Deafness. D. McKenzie. —p. 597.
*Pathology of Epidemic Catarrhal Jaundice. E. A. Ross.—p. 599.
*Treatment of Tuberculous Disease of Spine in Young Children. L. S. Fry.—p. 600.
*Local Fat Atrophy Following Insulin Injections. E. A. Carmichael and G. Graham.—p. 601.

Chronic Appendicitis in Children.—Data are presented by Walton to show that acute appendicitis is an extremely common disease in children, patients under the age of 14 forming a high percentage of all those affected by acute changes. Nearly 33 per cent of the total number of cases occur in children. It is well recognized that this disease in children has a higher mortality and is more serious than in adults. This may be due to the fact that young children are less likely to notice their earlier symptoms, and that as they are prone to ill defined stomachaches the attack may be overlooked until it has reached a dangerous stage. Whatever the reason, there can be no doubt that it is of the utmost importance to recognize these attacks and to carry out an operation at the earliest opportunity.

Late Results of Pulmonary Fibrosis.—The results of Wood's investigations suggest that (*a*) a diagnosis of postpneumonic fibrosis is justified only when the physical signs of this condition are definite and persist over a period of some months; (*b*) when permanent fibrosis of a lung results from bronchopneumonia, bronchiectasis is not an inevitable sequela; (*c*) fibroid lung is compatible with fair health over a period of many years, provided it is not associated with bronchiectasis, and (*d*) these records, admittedly incomplete, support the general opinion that the prognosis of bronchiectasis in childhood is always grave and death before adult life is to be anticipated.

Diathermy in Chronic Middle Ear Deafness.—An experimental trial of medical diathermy in chronic catarrh of the middle ear has so much diminished the deafness and tinnitus that McKenzie draws attention to the method in order that others may try it. In favorable cases improvement in the hearing and diminution of the tinnitus took place, and in one or two cases the change in the hearing occurred unexpectedly. In one instance, that of a medical man with increasing deafness of ten years' standing, the hearing for the tuning fork at the meatus rose from minus 20 seconds to minus 10 seconds after the fourth exposure to the current, and the improvement continued. The effect on tinnitus proved also to be full of surprises. In some it at once became much less loud; and one patient lost the noises altogether. In others an unusual fluctuation in the intensity of the tinnitus was noticed; at one time it would become louder than ever, at another it would be so soft as to be scarcely audible. But the tendency in these cases also has been for the noises to become, as time has gone on, more and more subdued. At the same time the diathermy made, or seemed to make, the tinnitus much worse in one patient. One must therefore be guided by results. For how long a time the treatment should be continued also depends largely on results. Thus in early, mild cases, a few weeks of treatment will be sufficient, whereas it can scarcely be expected to relieve old obstinate cases of middle ear deafness for many weeks or even months.

Pathology of Epidemic Catarrhal Jaundice.—The epidemic studied by Ross confirms the observation that for some unknown reason outbreaks of epidemic catarrhal jaundice are liable to occur chiefly in or about the month of November. The average age of the patients was about 15 years. There was present, especially at the onset, constitutional disturbance. Blood examinations, however, seemed to indicate that this was of short duration, nor was the blood picture in any way suggestive of typhoid or paratyphoid infection. In contrast to Weil's disease, nephritis was slight or absent. An abnormal bacillus was isolated from the intestine in one case.

Treatment of Tuberculosis of Spine.—Fry has, for some years, found a plaster bed or boat, extending from the head to just above the knees, the most useful and satisfactory method of treatment in infants. The boat rests on wooden blocks screwed into the plaster and raised high enough above the level of the bed to admit a bed-pan without movement of the child. The raising of the boat has the additional advantage of permitting a considerable amount of movement of the legs. In a properly constructed boat the child's spine will be slightly extended, and, if the aim is to camouflage the hump by producing compensatory spinal curves, a firm leather pad may be placed just above or below the kyphos as required. Should it be desired to open out the diseased vertebrae still further by hyperextension, the pad may be placed directly under the apex of the deformity. It is not possible by this method to produce the high degree of hyperextension effected by the Alton "back door splint" or the "push-and-pull" apparatus, but enough extension can be obtained to allow of reformation and recalcification of diseased vertebrae. The method is especially useful in caries of the cervical spine, since the head is fixed in an extended position by the head support and a lightweight extension may easily be applied if desired. In practice it is not usually necessary to move the child more often than once or twice a week, and with careful nursing the boat should last for three or four months. Fixation of the spine on a firm, unyielding support is thus secured. Toward the end of the period of recumbent treatment the boat is removed for a part of each day, and the child placed on his face to encourage exercise of the back and thigh muscles and to allow the sun to reach the back. The technic is simple and the material required inexpensive.

Local Fat Atrophy Following Insulin Injection.—Carmichael and Graham have seen three patients who had a peculiar local atrophy of the subcutaneous fat following the injection of insulin. The insulin had been injected too often in one localized area, with the result that changes in the subcutaneous fat were brought about, presumably by the repeated minute doses of a lipolytic ferment. The treatment would seem to be the avoidance of the same area of skin for repeated injections.

Egyptian Medical Association Journal, Cairo

11: 1-27 (Jan.) 1928

Biochemical Race Index of Egyptians. A. T. Shousha, Cairo.—p. 4.
Bilharziasis of Conjunctiva. M. Sobhy.—p. 12.
Determination of Solubility of Digitoxin. K. Samaan.—p. 16.

11: 29-55 (Feb.) 1928

Cytology of Blood. L. Awad.—p. 29.
Intratracheal Injection of Lipiodol in Lung Diseases. M. Ibrahim. —p. 41.

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Journal de Médecine de Lyon, Lyons

9: 87-118 (Feb. 20) 1928

Arthritism in Child. G. Mouriquand.—p. 87.
Symptoms of Congenital Syphilis in Early Childhood. M. Péhu and A. Brochier.—p. 95.
*Attacks of Apnea with Cyanosis and Apparent Death in the Infant. C. Gardère.—p. 103.
*Temperature in Whooping Cough. A. Dufourt.—p. 109.

Attacks of Apnea with Cyanosis and Apparent Death in the Infant.—Attacks of apnea were observed in two infants born at term. Repetition of the attacks caused death. Artificial respiration seems to be the only method of treatment at hand. Warm baths, inhalation of oxygen and stimulating injections of camphorated oil should be prescribed to combat the condition of prostration existing between attacks. Antisyphilitic medication may be tried.

Temperature in Whooping Cough.—Four cases illustrating the inverted intermittent type of fever in whooping cough are reported by Dufourt. It usually occurs in infants and in connection with bronchitis with small mobile foci of congestion. The convalescence in these cases is sometimes especially rapid.

Journal des Praticiens, Paris

42: 129-144 (March 3) 1928

*Purée of Potatoes with Milk in Weaning. G. Variot.—p. 129.
Tabetic Foot. Delbet.—p. 132.
What Is Meant by Tuberculous Bronchitis. A. Giraud.—p. 134.

Purée of Potatoes with Milk as First Weaning Food.—Variot recommends the first administration of potato milk mixture at 7 or 8 months. The antiscorbutic properties of potatoes are well known. The well cooked potato should be mashed and pressed through a sieve and then boiled in the milk. It is given twice a day; in the beginning one soupspoonful in the day's milk, later three or four spoonfuls.

Journal d'Urologie Médicale et Chirurgicale, Paris

25: 5-96 (Jan.) 1928

Pathogenesis and Treatment of Certain Cystalgias. Marion.—p. 5.
Thirty-Five Cases of Cystalgia with Clear Urine in Women. R. Dalsace.—p. 7.
*Diabetes and Operations on Urinary Tract. I. Chiofalo.—p. 11.
Retention of Urine. H. Shigematsu.—p. 16.

Diabetes and Operations on Urinary Tract.—The patient's urine and blood are made sugar-free either by diet alone or by diet and insulin. An hour and a half before operation, from 15 to 20 units of insulin is injected. A half hour later the patient is given from 15 to 20 Gm. of sugar, then an injection of morphine. Chloroform must not be used for anesthesia. The methods open to choice are ether, nitrous oxide and spinal anesthesia, in order of decreasing danger. During the forty-eight hours following operation, the patient should be treated as a subject threatened with diabetic coma. He should receive sugar, water and insulin. It is best to give from 30 to 40 units of insulin in the afternoon and thereafter to examine each sample of urine excreted, giving sugar to avoid symptoms of hypoglycemia. If the operation is urgent, the patient should be given from 40 to 50 units of insulin one hour before operation and a half hour later a proctoclysis of 500 Gm. of fluid containing dextrose.

Paris Médical

67: 221-236 (March 10) 1928

Mild Encephalopathies of Infancy. R. Targowla and A. Lamache.—p. 221.
Hydremesis: Vomiting of Secreted Fluids. R. Mareschal.—p. 226.
*Malaria Treatment of Tabes. D. Paulian.—p. 231.
Examination for Tubercle Bacillus in Stools of the Tuberculous. Caussimon.—p. 233.

Malaria Treatment of Tabes.—In the malaria treatment of tabes, Paulian uses the same method as that used for general paralysis but prefers the intravenous route (from 2 to 5 cc. of blood), since the incubation period is shorter. The quartan or tertian strain should be used. The patient should be treated with strychnine and calcium glycerophosphate. During the febrile attacks, the heart should be sustained and the temperature kept from going too high, or remaining high over too long a period, by means of a drug which does not influence the parasite. The motor disturbances are speedily influenced. The fulgurating pains, worse during the febrile attacks, become decreased in frequency and intensity and disappear weeks or months later. The gastric crises are rebellious during treatment and continue sometimes for weeks, but diminish afterward. The reactions in the blood and spinal fluid are modified, but not constantly. Nine cases benefited by the treatment are reported.

Presse Médicale, Paris

36: 225-240 (Feb. 22) 1928

Details of Spinal Anesthesia. R. Leriche.—p. 225.
*Treatment of Bone and Joint Tuberculosis with Calcium Chloride Intravenously and Ultraviolet Rays. C. Clavelin and A. Sicard.—p. 227.

Treatment of Bone and Joint Tuberculosis.—In their treatment of tuberculosis of bones and joints, Clavelin and Sicard inject solutions of calcium chloride intravenously. In the first series, five injections of a 1 per cent solution, in doses of 50, 100, 150, 200 and 250 cc., respectively, are given, and then five injections of a 1.25 per cent solution in the same doses. After a twenty day period of rest, the treatment is resumed with five injections of a 1.25 per cent solution, in doses increasing from 50 to 250 cc., followed by five injections of a 1.50 per cent solution in the same doses. After the injections, which are made every second day, the patient is exposed to the ultraviolet ray. The latter therapy, consisting of thirty treatments, extends over the rest period. Among twenty-eight patients treated, only one case of intolerance was observed. In four patients, there was a slight decrease in weight, in six the weight remained stationary and in seventeen there was an increase of from 2 to 9 Kg. Many fistulas stopped suppurating and healed.

36: 241-256 (Feb. 25) 1928

*Calcium Chloride Treatment of Ascites in Hepatic Cirrhosis. L. Blum and P. Carlier.—p. 241.
Pseudotabetic Osteo-Arthropathy of Syringomyelic Spine. L. Cornil and H. Francfort.—p. 243.
Correlations Between Urinary Output and Functioning of Nervous System. R. Porak.—p. 245.

Calcium Chloride Treatment of Ascites in Hepatic Cirrhosis.—The cases reported by Blum and Carlier show that calcium chloride exercises a diuretic action on the ascites of hepatic cirrhosis. The diet during treatment must be salt-free. The large doses of calcium chloride inaugurate a condition of acidosis. Two factors to be taken into consideration before the administration of this treatment are: the amount of water retention and the degree of renal permeability.

Revue Médicale de la Suisse Romande, Lausanne

48: 81-176 (Feb. 25) 1928

Pneumothorax or Phrenicotomy. F. Ody.—p. 90.
*Serodiagnosis of Tuberculosis by Methods of Vernes and Besredka. V. E. Badoux and M. Narbel.—p. 102. C'en.
*Rare Toxemia of Pregnancy. G. Bernard.—p. 119.
Synthalin in Treatment of Diabetes. S. Katzenelbogen and E. Martin.—p. 126.
Forceps on Unengaged Head in Superior Strait for Acute Asystolia During Labor. N. Guerdjikoff.—p. 136.
Furuncles, Filtrates and Vaccines. P. Chausse.—p. 140.

Serodiagnosis of Tuberculosis by Methods of Vernes and Besredka.—In the surgical cases which they tabulated, Badoux and Narbel found the Vernes method to have a diagnostic value superior to that of the Besredka method. In subjects clinically nontuberculous, the Vernes test was positive twice, the Besredka nine times under analogous conditions. The Vernes method is superior to the Besredka for syphilitic serums. Both methods gave constantly negative results in healthy individuals. It must be admitted that the Vernes method is no more specific in tuberculosis than the Besredka, but it gives more exact results. Neither method is satisfactory for the examination of retroplacental blood or blood from the cord.

Rare Toxemia of Pregnancy.—Bernard reports the case of a woman in whom edema of the lower limbs, the vulva, the backs of the hands and the face, with violent headache, appeared about the fifteenth week of pregnancy. Three days before the beginning of labor the edema, particularly that of the vulva, began to diminish. Four days after labor it had

completely disappeared. Four months later she noticed an edema of the face, similar to the previous one, but more marked. She was found to be two months pregnant. As before, the blood, the heart and the kidneys were normal. Four days after the interruption of pregnancy, the edema had entirely disappeared. It seemed to be due to a toxemia of pregnancy. Treatment by rest in bed, salt-free diet and diuretics had very little effect.

Schweizer Archiv f. Neurologie u. Psychiatrie, Zurich

21: 187-360, 1927

Occupational Therapy. M. Tramer.—p. 187.
Psychic Sequelae of Lethargic Encephalitis: Delirium and Hallucinations. H. Steck.—p. 214.
Small Shot in Brain: Cerebral Anesthesia of Longitudinal Type from Subcortical Lesion. G. Calligaris.—p. 238.
"Microcephalia Vera." H. Brunschweiler.—p. 246.
Cyto-Architectonics of Area Striata in Relationship to Central Optic Tract. B. Chasan.—p. 283.
Experimental Convulsions: Changes in Permeability. H. C. Syz.—p. 321.
*Peculiar Action of Pilocarpine in Some Diseases of Nervous System. H. Wild.—p. 331.

Peculiar Action of Pilocarpine in Some Diseases of Nervous System.—If there is a pyramidal lesion, pilocarpine brings out its symptoms or strengthens those already existing. This, Wild illustrated by his two cases of hemiplegia, a case of chronic hydrocephalus, four cases of cerebral syphilis and a case of multiple sclerosis. In three cases of postencephalitic parkinsonism, one symptom existing before the injection was emphasized and some previously nonexisting (tremor and clonus) appeared. The method of action of the alkaloid is not yet clear. It seems to act on the parasympathetic conduction paths belonging to the voluntary musculature, through which tonus is increased. The centers regulating tonus should be sought in the region of the midbrain and the basal ganglia. The cerebral cortex may exercise a general inhibiting and controlling function on these.

Schweizerische medizinische Wochenschrift, Basel

58: 161-208 (Feb. 18) 1928

Gillette Razor Blade in Surgery. H. Curchod.—p. 161.
Case of Glossopharyngeal Neuralgia. A. Fonio.—p. 161.
*Nature of Osteochondritis Juvenilis of Hip Joint. F. de Quervain.—p. 163.
Surgical Anatomy of Splenic Vessels. C. Henschen.—p. 164.
*How to Obtain Good Scars After Goiter Operations. A. Lüthi.—p. 177.

Nature of Osteochondritis Juvenilis of Hip Joint.—From a study of the material of seventeen years (thirty cases) de Quervain cannot accept Calot's theory of congenital subluxation as the cause of osteochondritis juvenilis (Perthes' disease). In most of his cases there were slight changes in the "well" side. The slight subluxation that occurs in the course of some cases is a consequence of the deformation of the head and acetabulum. He was able to follow two cases from their beginning, and in the early stage there was neither flattening of the acetabulum or subluxation. A constitutional cause is, however, no doubt present. The frequency in cretinism of changes suggesting osteochondritis juvenitis is highly significant.

How Do We Obtain Good Scars After Goiter Operations?—The best cosmetic results in goiter operations are obtained with incision of the skin in the lowest natural wrinkle of the neck, with division of the platysma higher up and subsequent exact, complete muscle suture, the extramedian introduction of the drain at the edge of the sternocleidomastoid, and by placing subcutaneous sutures, especially on both sides of the drain. These latter permit early removal of the skin sutures. The fresh scar should be protected from keloid-producing light rays by means of a metal plate.

Annali d'Igiene, Rome

38: 1-100 (Jan.) 1928

*Elimination of Rabic Virus. V. Puntoni.—p. 1.
*Organisms in Bread. G. La Rosa.—p. 23.
Methylene Blue Reduction and Bacteriophagy. C. Enrico.—p. 34.
Behavior of Horses Toward Tetanus Immunization. P. Bardelli.—p. 48.

Discharge of Rabic Virus by Gastro-Intestinal Tract.—In rabid dogs, gastro-enteric symptoms are relatively common; in fact, gastro-enteritis may be the outstanding manifestation. After death, gastro-intestinal congestion and hemorrhage may be found. In rabbits and guinea-pigs similar conditions exist. Enteric elimination of the virus was demonstrated by the intestinal loop exclusion method. The rabic virus shows, therefore, a tendency to abandon the body by the oral cavity, stomach and intestine as well as by the digestive glands.

Organisms in Bread.—Experimentally, it was found that many saprogenic organisms—derived from the water used, yeast, baker's hands—may resist the temperature used in baking. Most pathogenic germs were destroyed, but some, as the diphtheria and anthrax (sporogenous) bacilli proved resistant.

Archivio Italiano di Chirurgia, Bologna

20: 263-373 (Jan.) 1928

Intestinal Lymphosarcoma. G. Giuliani.—p. 263.
*Bilateral Parotid Carcinoma. I. Tansini.—p. 295.
Sequelae of Treatment of Hydrocele. D. Rigano-Irrera.—p. 303.
Endocrine Grafts. V. Pettinari.—p. 317.

Bilateral Carcinoma of Parotid Treated by Double Jugular Ligation.—Tansini has been unable to find in the literature a case similar to his, one of carcinoma in both parotids. The patient, aged 69, recovered after removal of the glands with ligation of both internal jugular veins.

Clinica Pediatrica, Modena

10: 1-63 (Jan.) 1928

Irradiated Foods in Rickets. Spolverini.—p. 1.
*Influence of Thymus and Spleen on Growth. G. Macciotta.—p. 17.
Sedimentation Test in Enteritis and Kidney Disease in Children. G. Carbonara.—p. 46.

Relation of Thymus and Spleen to Growth.—Experiments on young rabbits apparently demonstrate that the action of the spleen on growth and development may be more or less completely replaced by that of the thymus. When splenectomy is followed or preceded by thymectomy, the growth deficiency is enhanced, and atrophy, rachitic manifestations, cachexia and even death may occur. On the blood elements, the thymus and the spleen act in opposite directions, as one corrects the effect of the other, especially as regards leukocytes. The action of the spleen prevails immediately after birth, later it is supplemented or replaced by that of the thymus. At a still later period the function of both organs is assumed by other structures.

Pediatria, Naples

36: 113-168 (Feb. 1) 1928

*Colon Bacillus in Pyelocystitis. B. Vasile.—p. 113.
*Intradermal Sodium Chloride Test in Infants. L. Amitrano.—p. 130.
*Lymph Test in Malaria. A. Sirca.—p. 135.

Variability of Colon Bacilli in Infantile Pyelocystitis.—Colon bacilli were isolated from the urine of nine cases of pyelocystitis in children. They were of the same kind as those demonstrated in the feces, but exhibited some variations. Such changes are probably due to immunizing phenomena in the body. Agglutination tests with the patient's blood serum proved positive only five times.

Intradermal Sodium Chloride Test in Infants.—In ten newborn infants, the cutaneous absorption of sodium chloride solution was invariably hastened. The time varied from twenty-five to forty minutes. In eleven infants over 10 days old and in healthy infants up to 2 months, the absorption time ranged between fifty-five minutes and one and one half hours. In nine premature infants, the values ran from forty minutes in the first days after birth to two and one half hours in the second month. A study of twenty-four cases of intoxication, dystrophy and decomposition disclosed much variation of the absorption time in dystrophy, slow absorption in decomposition and quicker absorption in alimentary intoxication conditions. In dystrophic cases, the test has a prognostic value. Of the various substances tested, hypotonic solutions of sodium chloride and dextrose were absorbed quickest. Para-isotonic solutions of sodium sulphate and lactose came next, and finally isotonic sodium chloride and hypertonic dextrose solutions.

The Enzyme Reaction in Malaria.—The results of the enzyme reaction in eleven cases of malaria in children

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showed invariably an involvement of the spleen. Involvement of the pancreas and liver came next. In some cases in which the enzyme reaction was weak with spleen and pancreas derivatives, it proved strong with a liver product. In only a few cases did the suprarenals give a strong reaction.

Policlinico, Rome

35: 83-142 (Jan. 23) 1928. Practical Section

*Otitis Media with Spirilla. R. Motta.—p. 83.
Cologne Water Dermatosis. A. Pozzo.—p. 86.
Barbital Poisoning. A. Trossarelli.—p. 92.

Chronic Purulent Otitis Media with Fusiform Bacilli and Spirochetes.—In two cases of chronic purulent otitis media in infants, fusiform bacilli and Vincent's spirochetes were found in the discharge. Some pseudodiphtheria bacilli were also detected. In both patients, the discharge stopped following local treatment with arsphenamine.

35: 1-64 (Jan. 15) 1928. Surgical Section

Chronic Irritation of Renal Pedicle. G. Anniechiarico-Petruzzelli.—p. 1.
*Histamine Test. R. Brancati.—p. 18.
*Multiple Carcinomatous Metastases. B. Roccia.—p. 24.

Histamine in the Study of Gastric Secretion.—In using histamine to test gastric acidity, it must be kept in mind that its yielding values are about thirty points higher than those of Ewald's meal. Histamine should be preferred to the meal test, as its values are more constant. The juice thus secured is also purer.

Bone Metastases of Prostatic and Mammary Cancer.—Of the three cases reported, two were secondary to prostatic carcinoma and one to mammary cancer. In one case, the clinical diagnosis had been Pott's disease. In one, the primary growth was relatively small, while the metastases were very extensive.

Riforma Medica, Naples

44: 73-96 (Jan. 23) 1928

Lymphosarcoma. F. Galdi.—p. 73.
Diagnostic Value of Solar Reflex. G. Pintus.—p. 80.
*Diagnosis of Pregnancy. V. Lenzi.—p. 82.

Hemoclastic Test in Diagnosis of Pregnancy.—In eleven cases of pregnancy, a hemoclastic test was performed with either ovarian or mammary gland substance. The course invariably agreed with the result. In control cases, the leukopenia was either slight or nonexistent.

Anales de la Facultad de Medicina, Montevideo

12: 535-680 (Sept.-Oct.) 1927

Treatment of Rectal Cancer. C. Butler.—p. 535.
Uncommon Parotid Tumors. P. Larghero Ibarz.—p. 546.
Auricular Flutter. A. Alvarez Moullá and F. E. Cordero.—p. 558.
Uruguayan Anopheles. A. Gaminara and R. V. Tálice.—p. 582.
*McClure-Aldrich Test. J. C. Plá.—p. 588.
Addison's Disease. S. Buquet, J. M. Jaureguy and J. C. Castiglioni.—p. 610.

Intradermal Sodium Chloride Test in Various Conditions.—A study of the intradermal sodium chloride test in twenty-nine normal children and adults revealed a normal disappearance time of from forty-five to sixty minutes. Neither the age nor the site of injection caused any difference. A shortened disappearance time was found in heart disease with blood stagnation or edema. In arterial obstruction, the test proved useful to determine the level of the obliteration. In renal disease with edema, the time is shortened, unless there is much urea retention. The disappearance time also decreases in intoxication with vomiting and diarrhea, catharsis or any kind of ascites. In acute infections, a considerable decrease of time suggests fluid administration.

Anales de la Facultad de Med. y Farmacia, Havana

1: 111-218 (Dec.) 1927

*Multiple Myeloma in a Child. A. A. Aballí.—p. 113.
Herpes Zoster and Varicella. V. Pardo-Castelló.—p. 126.
Diagnosis of Brain Tumors. C. M. Ramírez Corría.—p. 136.
Frazier's Laminectomy. M. Costales Latatú.—p. 146.
Experimental Nephritis. O. Ortiz Machado.—p. 155.
Needle for Splanchnic Anesthesia. F. Leza.—p. 159.
Parasitic Diseases. A. García Rivera.—p. 162.
Kolmer's Test in Syphilis. A. Curbelo Hernández.—p. 169.
Postoperative Roentgenology. J. Case.—p. 173.

Multiple Myeloma in a Child.—Aballí's case of multiple myeloma in the skull and lower extremities was in a child, aged 3. The condition began before the boy was 17 months old. Diabetes insipidus coexisted. Lesion of the sella turcica was not roentgenologically demonstrable. Bence-Jones' albumin appeared intermittently in the urine.

Archivos Arg. de Enf. del Ap. Digestivo, Buenos Aires

3: 1-212, 1927

*Pulmonary Tuberculosis in Diabetes. P. Escudero.—p. 5.
Insulin Psychosis and Shock. F. Umber.—p. 20.
Basal Metabolism in Diabetes. M. R. Castex, M. Schteingart and H. Mollard.—p. 28.
Esophageal Diverticulum. H. A. Mascheroni and J. F. Tourreilles.—p. 49.
*Insulin Administration. G. P. Goñalons and R. Lauers.—p. 58.
The Reticulo-Endothelial System. G. P. Goñalons.—p. 74.

Pulmonary Tuberculosis in Diabetes.—The prevalence of diabetes is comparatively low in Argentina. Among 360,758 patients, 1.87 per thousand had diabetes. The diabetes death rate was 3.7 per thousand in Argentina and 8.4 in Buenos Aires. Of late there seems to be an increase. Among 735 cases of diabetes, 9.1 per cent had tuberculosis. Insulin should be used liberally in such combined cases, as most of them are very resistant. Pneumothorax should be applied as a routine in active cases. The use of tuberculin is inadvisable, as it acts unfavorably on carbohydrate tolerance. Tuberculosis usually develops in patients over 40. The disease is often overlooked, partly because of its mildness. In patients with an active pulmonary lesion and diabetes the mortality reached 71.4 per cent.

Intradermal Use of Insulin.—A study of three normal persons and of four patients with diabetes disclosed that the decrease in blood sugar after injection of insulin was more prolonged and relatively more marked when the injection was given by the intradermal rather than by the subcutaneous route.

Archivos Chilenos de Pediatría, Santiago

4: 667-701 (Sept.-Oct.) 1927

Hemorrhages in the New-Born. C. Mönckeberg.—p. 667.
*Heart Disease in Children. F. Patiño Mac-Iver.—p. 673.
Artificial Pneumothorax in Children. G. Moraga F.—p. 686.
Bronchopneumonia Following Measles. B. Bambach.—p. 694.
Treatment of Tuberculous Osteo-Arthritis. A. Johow.—p. 696.

Heart Disease in Children.—Among 909 patients in a children's hospital, 5.28 per cent had heart disease. Chorea and arthritis were the usual etiologic factors.

Archivos de Endocrinología y Nutrición, Madrid

6: 295-352 (Jan.-Feb.) 1928

*Gastric Action of Insulin and Synthalin. L. García Bustamante.—p. 295.
Rôle of Suprarenal. B. A. Houssay.—p. 334.

Changes in Gastric Secretion and Motility After Administration of Insulin and of Synthalin.—In twenty-nine cases studied after administration of insulin, the free acidity was increased in twenty-three, decreased in three and changed but slightly in three. After administration of insulin and atropine, the respective figures were one, thirteen and six After treatment with synthalin, there was increase of the free acidity in two, decrease in five and slight change in three of ten patients. In eight cases, gastric motility was studied after insulin administration. It was increased in five and changed slightly in three (cholecystitis and ulcer). Of three patients receiving insulin and atropine, two exhibited no change in motility and one showed some retardation. In patients with diabetes and gastric disease, if insulin seems to act unfavorably, the combination with atropine might be tried.

Boletín de la Sociedad de Cirugía de Chile, Santiago

5: 273-292 (Nov. 23-Dec. 14) 1927

*Appendicitis and Urinary Retention. W. E. Coutts.—p. 273.
Multiple Fractures of Leg. F. Opazo.—p. 274.
Strangulated Diaphragmatic Hernia. A. Rahausen.—p. 277.
Verumontanum Conditions. I. Díaz Muñoz.—p. 278.
Synovectomy in the Knee. L. Vargas Salcedo.—p. 281.
Osteochondritis. A. Inostrosa.—p. 289.

Acute Appendicitis with Total Urinary Retention.—A severe, diffuse pain in the lower abdomen resulted in com-

plete urinary retention. Examination led to a diagnosis of appendicitis, which was confirmed at operation. Two hours after removal of the appendix, normal micturation returned. In the discussion, Covarrubias described a case of rebellious urinary incontinence in a child. The condition subsided after appendectomy.

5: 293-311 (Dec. 28) 1927

*Echinococcus Embolism. A. Constant and H. G. Huidobro.—p. 293.
Traumatic Diaphragmatic Hernia. F. de Amesti.—p. 298.

Echinococcus Embolism.—In a girl, aged 17 years, an embolus in the right iliac artery was caused by a hydatid cyst. An arteriotomy was first performed, perhaps too late; amputation of the leg became necessary.

Revista Española de Medicina y Cirugía, Barcelona

11: 1-62 (Jan.) 1928

*Malarial Therapy in General Paralysis. A. Vallejo Nágera and R. González Pinto.—p. 3.
Sacralization and Spina Bifida. A. Villacián Rebollo.—p. 8.
Amenorrhea and Thyroid. J. M. Vilaplana.—p. 13.

Malarial Therapy of General Paralysis.—Sixty-three cases of malaria inoculation for general paralysis are analyzed. In general, remissions reached 42.46 per cent, and 9.53 of the patients were able to return to their former work. The mortality reached 12.69 per cent, but would amount to only 8.33 per cent if all the patients were considered. In 44.44 per cent, the treatment proved a failure.

Sciencia Médica, Rio de Janeiro

5: 671-721 (Dec.) 1927. Partial Index.

*Leprosy and Hookworm Disease. J. Aben-Athar.—p. 674.
Complement Fixation in Granuloma Coccidioides. O. Da Fonseca, Jr., and A. E. De Arêa Leão.—p. 682.

Possible Relation Between Leprosy and Hookworm Disease.—An examination of the feces of 105 lepers disclosed the lepra bacillus in fifty-one specimens. This is the same proportion as that found in the nasal mucus. Certain data point to a possible introduction of the bacillus into the human body by hookworm larvae.

Semana Médica, Buenos Aires

35: 65-128 (Jan. 12) 1928

Hepatic Echinococcosis in Children. C. Lagos Garcia and A. Lagos Garcia.—p. 65.
Postencephalitic Psychoses. G. Bermann.—p. 111.
*Phosphates in Pulmonary Tuberculosis. P. P. Piñero Garcia and R. Calatroni.—p. 114.
Vernes' Test in Tuberculosis. R. Rubino.—p. 118.
Crushing Injury to the Skull. M. G. Malfatti.—p. 122.

Blood Phosphates in Pulmonary Tuberculosis.—Inorganic blood serum phosphorus exhibited regular values (about 4 mg. per hundred cubic centimeters) in eighty cases of pulmonary tuberculosis. It varied more in the whole blood, averaging 8 mg. No connection was found with age or sex.

35: 129-192 (Jan. 19) 1928

Tuberculosis of the Mesentery. J. R. Goyena.—p. 129.
Cerebellar Sclerosis. J. L. Hanon.—p. 143.
Appendicitis. A. Yódice.—p. 155.
Intestinal Excretion of Cholesterol. H. Salomón.—p. 166.
*Urea in Blood and Saliva. A. Bergman and I. Barg.—p. 167.
Emergency Cholecystitis. D. A. Pasqualis.—p. 169.

Urea Determination in the Saliva.—When for any reason a determination of the urea in the blood serum seems inadvisable or impracticable, Hench and Aldrich's salivary method may be used advantageously. The sixteen cases reported demonstrate the parallelism between the urea values in the blood and in the saliva.

Siglo Médico, Madrid

81: 109-136 (Feb. 4) 1928. Partial Index

*Prostatectomy and Stones. A. Pulido Martín.—p. 109.

Prostatectomy with True Prostatic Stones.—In a physician, aged 63, the prostate was removed because of adenomatous enlargement. The striking thing was the finding of stones (more than 100) in the prostate—not, as usual, in the prostatic urethra. This mass of concretions prevented the passage of a sound, as required by the existing hematuria. Serious postoperative hemorrhage developed but it was controlled by blood transfusion.

81: 137-164 (Feb. 11) 1928. Partial Index

*Scopolamine Psychoses. J. M. de Villaverde.—p. 137.

Mental Disturbances Caused by Scopolamine.—Four cases with anxiety delirium, described, exemplify the mental disturbances which may be caused by even small doses (ten drops of a 1:1,000 solution) of scopolamine hydrobromide.

Archiv für Kinderheilkunde, Stuttgart

83: 161-240 (Feb. 17) 1928. Partial Index

Hemoglobin Resistance in Young Animals. H. Bischoff.—p. 161.
Psychology of Childhood. J. S. Galant.—p. 170.
Encephalography in a Child with Porencephalia. K. Salomon.—p. 175.
Whooping Cough. G. Abraham.—p. 185.
Gangrenous Ulcers of Chickenpox Complicating Measles. J. Kondo.—p. 190.
*Influence of Cooking on Specific Dynamic Action of Food. W. Hilsinger.—p. 193.

Influence of Cooking on Specific Dynamic Action of Food.—In three children, aged 9, 12 and 15, respectively, the specific dynamic action of 150 Gm. of meat and 500 cc. of milk, raw and cooked, was tested by means of numerous respiration experiments with the Zuntz-Geppert apparatus. The tests, which lasted twenty minutes, were repeated hourly for from five to ten hours after the ingestion of food. Cooked meat developed in most experiments a somewhat higher specific dynamic action, which set in earlier than in the case of raw meat. The reason for this is that the disintegration of muscle fiber sheaths facilitates digestion and stimulates it by forming aromatic substances. In the milk experiments there was no evidence of a difference in the calory consumption curve between the raw and cooked liquid. The rise appearing after from one to two hours with milk as a "mixed food" was ascribed to its large carbohydrate content. The specific dynamic action decreases after from five to seven hours, and then rises generally without reaching the fasting level, owing to the latent rise in tonus, earlier action and the beginning of the metabolic processes of hunger. The respiratory quotient may also rise again and this second rise may be taken as an indication that the action of the test food is finished. Hilsinger raises the question of constitutional differences in the examined, which would permit the outlining of certain types of curve for the specific dynamic action and suggests that this might be the basis of anthropologic character types.

Archiv für klinische Chirurgie, Berlin

149: 621-820 (Feb. 21) 1928

Actinomycosis of Brain; Hemotogenous Metastatic Form. F. Jacoby.—p. 621.
Isolated Fracture of Transverse Processes of Lumbar Vertebrae Caused by Muscular Force. H. Boeminghaus.—p. 642.
Metabolism and Ketonuria in Surgical Diseases. M. A. Awdejewa, E. L. Thal and E. L. Prowatorowa.—p. 649.
Hypothesis to Elucidate the Bile Tract Problem. K. Blond.—p. 662.
Solitary Renal Cyst. Z. Kaïris—p. 700.
*Innervation of Sweat Glands and Surgical Treatment of Hyperhidrosis. W. Braeucker.—p. 718.
Sedimentation Reaction in Gastric Cancer; Its Value in Determining Operability. F. Nilsson.—p. 756.
Late Results of Subbotin's Operation for Complete Hypospadias with Urinary Incontinence. N. Petrow.—p. 762.
Carbon Dioxide Metabolism in Certain Surgical Conditions. E. Schneider and T. Straaten.—p. 774.
Wound Infection with Anaerobes in Civil Practice. J. Zeissler and K. Neller.—p. 793.

Innervation of Sweat Glands and the Surgical Treatment of Hyperhidrosis.—Braeucker studied the innervation of the sweat glands in a case of severe hyperhidrosis involving both feet and hands. The condition rendered the patient, a young woman, unfit for the ordinary occupations of life, besides producing general weakness. By procaine hydrochloride injection of the individual nerves of the brachial plexus, a corresponding skin area in the hand was rendered dry for about three hours, while the rest of the skin of the hand sweated profusely in response to ordinary stimulation by heat, hot drinks, etc. This experiment demonstrated that nerves controlling the sweat glands run in the peripheral

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nerves along with the sensory and motor fibers. It appeared logical to attempt to interrupt the course of secretory fibers at a point at which they were not mixed with the motor or sensory fibers. The rami communicantes suggested themselves. To control the sweating in the hand, the author sectioned the rami communicantes of the eighth cervical and first thoracic nerves of the left side. The result was complete restoration to the normal physiologic state. The sweat gland function has now remained normal for one year. A few months later, the rami communicantes of the fourth and fifth lumbar and of the first and second sacral nerves were cut on both sides. The author reports a complete sucess, persisting, so far, for nine months. The sweat stimulating fibers appear to run, as far as this single experience goes, exclusively in the sympathetic.

Archiv für Psychiatrie und Nervenkrankheiten, Berlin

82: 619-810 (Feb. 4) 1928

Hallucinations in Paralysis. T. Johannes.—p. 619.
*Blood Picture in Mental Disease. C. von Leupoldt.—p. 669.
Epileptic and Epileptoid: Body Structure and Character. H. Delbrück. —p. 708.
Conditions of Criminality. E. P. Hellstern.—p. 719.
An Atypical Psychosis. H. Jacobsohn.—p. 744.
"Flocculation Picture" of Spinal Fluid with Meinicke's Extracts. H. Boening.—p. 755.

Blood Picture in Mental Disease.—Fourteen cases of psychosis are analyzed by von Leupoldt. The most interesting are those which show at the height of the psychic alteration a low percentage of eosinophils and lymphocytes with relatively marked neutrophilia, and those in which the percentage of eosinophils and lymphocytes was high. In the first group, the treatment aimed at stimulation, in the second, at depression of the parasympathetic function complex. He saw only slight results in those patients who had relatively few eosinophils, few neutrophils and many lymphocytes. If any results were obtained, they usually went no further than to fit the patient to mingle in the life of the institution. The results in the cases with normal or almost normal leukocyte relations were no better or not as good. The blood picture changed but little and soon returned to the old form. Here one has the impression that with a torpid psychic condition there is a torpid blood picture.

Beiträge zur klinischen Chirurgie, Berlin

142: 1-228, 1928

*Splenectomy for Thrombopenia. W. Anschütz.—p. 1.
Justification of and Indications for Cholecystostomy. M. Krabbel.—p. 36.
*Operative Treatment of Acute Cholecystitis. G. Woytek.—p. 41.
Studies in Emptying of Gallbladder. H. Bronner.—p. 48.
*Bacteriology and Anatomy of Gallbladders Removed at Operation. H. Edelmann.—p. 73.
Effect of Vitamin D on Porous Osteomalacia Resulting from Biliary Fistula. H. Tammann.—p. 83.
Laminectomy for Spinal Tumors and Nontraumatic Diseases. L. Wieden. —p. 121.
*Gastro-Enterostomy and Its Faults. E. Hertel.—p. 157.
Treatment of Arteriovenous Aneurysm of Carotid Artery Within Cavernous Sinus. H. Fründ.—p. 221.

Splenectomy for Thrombopenia.—Anschütz collected 100 cases of splenectomy performed for thrombopenia, including four cases from his own clinic. In this series, there was no death from hemorrhage either during the operation or shortly after. Bleeding ceased in some cases as soon as the splenic vessels were ligated. That such an effect was not observed in all cases was, perhaps, due to the difference in the severity of the disease. The mortality in chronic cases was from 8 to 10 per cent. Operative risk in chronic or intermittent cases, in persons under 20 years of age, is slight as compared with the gravity of the disease itself, and the operation is clearly indicated. After a successful splenectomy the blood platelets rise to 500,000, 800,000 and even over 1,000,000. Later they begin to diminish in amount and may sink as low as they were before the operation. Patients whose platelet count remains high do well. An improvement in symptoms, however, was observed even in cases with a fairly low count. Fifty patients were followed for six months or longer. In thirty, the platelet count was normal or moderately diminished and twenty-five of these were free from all symptoms. In five patients with a count of from 100,000 down to 30,000, three had a good result and two relapsed. Fifteen patients had counts of from 30,000 down to 5,000. Of these, eight only showed improvement, three had hemorrhages and three died. The percentage of cures in these cases is about 60. Only ten cases of splenectomy for acute thrombopenia were found in the literature, four from the author's clinic. The mortality amounted to 80 per cent. The author feels that the difference in results is not due to a difference in underlying pathology, but to the fact that the favorable time for operation had passed. Acute cases of hemorrhagic aleukia are readily differentiated from this group by the blood picture. Splenectomy should be resorted to in cases of doubtful diagnosis, in spite of its futility in hemorrhagic aleukia.

Operative Treatment of Acute Cholecystitis.—Woytek reviews 703 cases in which operation for cholecystitis was done in Küttner's clinic. The study is made with the view of determining the best time for operative intervention in acute cholecystitis. Acute suppurative cholecystitis, phlegmonous or ulcerative cholecystitis with peritoneal involvement constitute an indication for an immediate operation. There is no unanimity as to what constitutes the acute stage of the disease. In Küttner's clinic the operation for ordinary cases of cholecystitis is performed after the acute symptoms have subsided. It should not, however, be delayed in the presence of certain threatening symptoms, such as peritonitis, acute empyema of the gallbladder, possibility of perforation, grave pancreatitis or cholangeitis. Prompt intervention is likewise indicated in severe primarily acute cases. In this series, twenty-six patients were operated on in the acute stage; the mortality was 19.2 per cent. Perforation of the gallbladder was noted seven times. In eighty-two acute cases in which operation was performed after the acute stage had subsided, the mortality was 10.9 per cent. Five hundred and ninety-five interim operations gave a mortality of 2.7 per cent.

Bacteriology and Anatomy of Gallbladders Removed at Operation.—The author submits a histologic and bacteriologic study of 150 freshly removed gallbladders. Muscle hypertrophy was present in more than half of the specimens. Elastic fibers were especially abundant in the fibrous, serous and subserous tunics. He concludes that the elastic fibers are of importance in helping to maintain the tonus of the gallbladder. In five cases the cystic duct was occluded by a stone, and in twelve cases such a condition most probably had existed before the operation. In no instance did he find an organic obstruction to bile flow. Bacterial cultures were obtained in 74.28 per cent of the cases. Bacteria were present in the gallbladder wall in 61 per cent, whereas they were cultivated from the bile in 39 per cent. They were cultivated from stones in 3 per cent only. *Staphylococcus* was present in 35.7 per cent, *Streptococcus* in 30 per cent, and *Bacillus coli* in 15 per cent. The latter was found exclusively in the bile. In the bile the streptococcus was found ten times as frequently as the staphylococcus, the latter being present principally in the gallbladder wall. No characteristic effect of the specific bacteria on the pathology of the gallbladder wall was noted. The combination stone of Aschoff was most commonly met with, the radial cholesterol stone was found seven times in fifty-five cases, the earthy pigment stone was the rarest. In attempting to answer the question of the relation of infection to stone formation, the author points out that in his material bacteria were present in almost 75 per cent of all cases. Only in one case with stone, a radial cholesterol stone, were the gallbladder contents sterile. He doubts the correctness of Aschoff's conception of cholesterol stone formation. Concentration of cholesterol in the gallbladder contents is perhaps only a predisposing factor. His results seem to indicate that the rôle assigned to infection by Naunyn is probably the other causative factor.

Gastro-Enterostomy and Its Faults.—Hertel concludes that gastro-enterostomy is not a physiologic procedure. Its usefulness is a limited one. It cannot be considered as the operation of choice in ulcer disease. It is to be resorted to in organic obstruction of the pylorus. It is a serious error to perform a gastro-enterostomy in the absence of a definite pathologic condition.

Deutsche medizinische Wochenschrift, Berlin

54: 257-296 (Feb. 17) 1928. Partial Index

Fever: Course in Genuine Pneumonia. L. Polak Daniels.—p. 257.
*Increasing Milk in Nursing Mothers by Light Treatment. K. Stolte and C. Wiener.—p. 259.
So-Called Accident Neuroses. M. Reichardt.—p. 261. C'tn.
Fever Treatment in Various Stages of Syphilis. W. Richter.—p. 264. C'en.
*Usefulness of Ringold Procedure for Diagnosis of Cancer. E. Haagen.—p. 265.
Treating and Prevention of Addiction to Alkaloids. P. Wolff.—p. 266. C'tn.
*Cocainism and Homosexuality. H. Hartmann.—p. 268.
Ozone Dry Baths and Hypertonia. G. Zehden.—p. 274.

Increasing Milk in Nursing Mothers by Ultraviolet Irradiation.—Stolte and Wiener prefer the manual expression method to any other in procuring breast milk for weak or lazy infants. Incomplete emptying of the breasts is at the bottom of many nursing difficulties. When there was a real lack of milk, the authors used ultraviolet rays with very good results. Twenty patients were irradiated once a day, beginning with from five to seven minutes and increasing by from two to five minutes until a period of from twenty-five to forty-five minutes was reached.

Usefulness of Ringold Procedure for Diagnosis of Cancer.—From his experience with the Ringold procedure, Haagen concluded that it is of no value either in early diagnosis or as a confirmation of the diagnosis of cancer.

Cocainism and Homosexuality.—Of forty-seven cocaine addicts, twenty-three admitted homosexual relations. Thirteen of these said that the perversion appeared in them after they had become addicted to the drug. Disturbances of potency are less frequent in the homosexual than in the nonhomosexual cocaine addict. There is an undoubted relation between cocainism and perversion. In one woman, aged 32, previously normal, homosexual tendencies, which led to homosexual practises, appeared after she became chronically addicted to cocaine. After stopping the drug, perversion disappeared and natural sexual tendencies took their place. Menstruation, which had been absent during addiction, returned one year after she gave up cocaine.

Klinische Wochenschrift, Berlin

7: 385-432 (Feb. 26) 1928. Partial Index

Functional Test of Reticulo-Endothelial System in Tuberculosis. R. Wigand and E. Heitz.—p. 388.
*Hemolytic Streptococci in Etiology of Scarlet Fever. Bürgers and T. Wohlfeil.—p. 389.
Physiologic Application of Climate of German Sea Coast. M. Klotz.—p. 392.
Demonstration of Four Human Blood Groups by Isoprecipitation. H. Dold and R. Rosenberg.—p. 394.
Demonstration of Usually Nonapparent Nystagmus. H. Frenzel.—p. 396.
Influence of Minimal Doses of Mercury on Differential Blood Picture. K. Lüddicke.—p. 398.
Differentiation of True Paratyphus B from Breslau Enteritis on Ammonium Chloride-Rhamnose Agar. K. L. Pesch and A. Maschke.—p. 401.
Mechanism of Alimentary Hyperglycemia. S. Hetényi and J. Pogány.—p. 404.
*Blood Groups in Inhabitants of Upper Hesse. H. Kliewe.—p. 406.
Active Method for Diagnosis of Syphilis. C. Bruck.—p. 407.

Hemolytic Streptococci in Etiology of Scarlet Fever.—The agglutination method does not differentiate scarlet fever streptococci from other varieties. Injections of a mixture of streptococcus and homologous or heterologous immune serum do not diminish the reaction but strengthen it. Bürgers and Wohlfeil remain skeptical as to the existence of a specific scarlet fever streptococcus toxin.

Blood Groups.—Kliewe presents nine genealogical trees, which are of especial interest because they show the blood group classification of members of families connected by marriage.

7: 433-480 (March 4) 1928. Partial Index

Circulation and Work. W. Mobitz.—p. 438.
*Method of Action of Liver Diet in Pernicious Anemia. P. Jungmann.—p. 441.
*Influence of Ether Anesthesia on Liver. K. Boshamer.—p. 445.
*Alveolar Carbon Dioxide in Epileptic Attack. H. Regelsberger.—p. 447.
Improvement of Terry's Rapid Histologic Diagnosis. E. Christeller.—p. 448.
Physiologic Variations in Peripheral Leukocyte Counts. E. F. Müller and L. Kast.—p. 450.
Pathogenicity of Bacterium Abortus of Bang for Man. H. Habs.—p. 453.
*Streptococci in the Blood in Polyarthritis. L. Surányi and E. Forró.—p. 453.
Blood Grouping in Relation to Human Superfecundation. R. Ganther.—p. 455.

Method of Action of Liver Diet in Pernicious Anemia.—Jungmann believes that the liver diet acts to decrease blood destruction, through influence on the reticulo-endothelial metabolic apparatus, rather than to increase blood production. A blood crisis, with an abundance of nucleated erythrocytes and young or myeloid leukocytes, was not seen in his patients. Furthermore, the urinary urobilin and the serum bilirubin values fell promptly, under liver treatment, and remained normal. He did not have success with liver treatment in cases of simple anemia from hemorrhage. In ten out of fifteen cases of pernicious anemia, he found a digestive aciduria, which he is inclined to connect with an abnormal colonization of colon bacilli in the small intestine, with resultant formation and absorption of lactic acid. The hydrogen ion concentration in the urine was not altered by liver diet in these patients, although it caused the anemia to disappear. The cause of the disease in these cases appeared to be a metabolic disturbance associated with abnormal functioning of the intestine and not amenable to liver treatment. In the five cases in which the p_H curve remained normal, a parenteral genesis for the disease must apparently be sought. These cases responded to liver diet in the same manner as the others.

Influence of Ether Anesthesia on Liver.—Investigations with the Bergmann-Eilbott method showed slight injury to the human liver from ether anesthesia. The injury was distinct in cases in which the liver parenchyma was already damaged. Latent hepatic injury exists in chronic cholecystopathies, in habitual users of alcohol, in chronic pancreatitis, carcinoma and chronic suppurations.

Alveolar Carbon Dioxide in Epileptic Attack.—In the preparoxysmal stage of genuine epilepsy, alkalosis of the blood is always present. Regelsberger reports that in one case he was able to demonstrate the same condition of the blood during the attack.

Streptococci in the Blood in Polyarthritis.—Surányi and Forró were able to culture green streptococci from the blood in 68 per cent of cases of polyarthritis.

Münchener medizinische Wochenschrift, Munich

75: 335-384 (Feb. 24) 1928. Partial Index

*Chills and Apperdicitis. M. Martens.—p. 335.
*Urticaria and Its Treatment. H. T. Schrens.—p. 340.
Diabetes Insipidus. H. Guillery.—p. 343.
Diverticulum of Appendix. R. Arnold.—p. 344.
Sacralization of Fifth Lumbar Vertebra as Cause of Back Pain. H. Martius.—p. 345.
Vaginal Diathermy. K. Kayser.—p. 347.
Two Hundred and Five Abdominal Punctures. Schwabe.—p. 348.
Simple Method of Preparing the Projection Diapositive. Sommer.—p. 348.
Active Iron. C. van Eweyk.—p. 350.

Chills and Appendicitis.—The appearance of a chill with symptoms of appendicitis means the invasion of the circulation by organisms and is therefore an extremely dangerous sign. The danger can be eliminated by the removal, within, at most, a few hours after the first chill, of the severely changed phlegmonous or usually gangrenous appendix together with its mesenteriolum. If more than twenty hours have passed since the first chill, the mesocolon should be examined, and if there is phlegmonous infiltration of the same, the ileocolic vein should be ligated. If there is pus in the mesenteriolum, venous ligation should be done. If after an operation on the cecum, chills appear or reappear or if there are signs of pyemia without chills, then as soon as possible—at latest, after the second chill—the abdomen must be reopened and the ileocolic vein ligated. If the chills do not cease, then the question of an hepatic abscess should be considered in the light of the leukocyte count, the blood picture, the roentgenogram and repeated puncture. If the exceptional condition of an isolated hepatic abscess exists, its opening will save the patient's life.

Urticaria and Its Treatment.—In a certain number of cases of acute or chronic urticaria, there exists a more or less distinct (according to the blood p_H measurements),

compensated acidosis (hypocapnia) while the rest of the cases show either a normal or a slightly raised alkali reserve. Injection of 1 cc. of lobelin once or twice a day speedily abolishes the urticaria of acidotic patients. Sodium bicarbonate or calcium chloride urea may also be used.

Nervenarzt, Berlin

1:1-72 (Jan. 1) 1928

Dangers in Too Great Specialization of Psychotherapy. A. Homburger. —p. 1.
*Paralysis Agitans. F. Lotmar.—p. 6.
Psychology of Psychotherapy. A. Maeder.—p. 16.
Origin of Neurotic Symptoms. K. Hansen.—p. 21.
*Dangers of Diagnostic Brain Puncture. E. Heymann.—p. 27.
Organ Inferiority. E. Kahn.—p. 43.
Schizophrenia Mitis from Psychotherapeutic Standpoint. A. Kronfeld.—p. 46.
Importance of Eye Symptoms for Diagnosis in Neurology. L. Schreiber. —p. 52.

Paralysis Agitans of Traumatic Origin.—Two cases are reported in which previously healthy men, aged, respectively, 31 and 45, developed paralysis agitans after a fall on the back. In the first case, the condition became rapidly worse after a second accident, in which the patient was thrown from an automobile, and sustained fracture of the neck of the femur. The first trauma affected the left side of the body and the subsequent rigor and tremor was most pronounced on the left side; after the second trauma, in which the chief injury was located on the right side, the symptoms became more severe on this side.

Dangers of Diagnostic Brain Puncture.—On account of the increased intracerebral pressure, the danger from diagnostic brain puncture is greater for patients with brain tumor than for the general neurologic and psychopathic patient. Almost all patients with brain tumors are made worse as regards their general condition and the focal symptoms, Heymann asserts, by brain puncture. Hemorrhage into a tumor and into a cyst, respectively, was found at necropsy in two of his cases. In all, five cases with bad results from brain puncture are reported—death in four, and increase of symptoms in the fifth. This diagnostic procedure must continue to be used, Heymann says, but its dangers, though unavoidable, should be recognized.

Zeitschrift für Hygiene und Infektionskr., Berlin

108: 259-438 (Jan. 30) 1928. Partial Index

*Action of Sun's Rays and Wind on Metabolism. W. A. Jakowenko.—p. 259.
D'Herelle's Phenomenon and Phagocytosis. K. Marcuse.—p. 308.
Catalase Formation by Colon Bacillus. O. Fernández and T. Garméndia. —p. 329.
Erythrocyte Anaphylaxis. J. H. Lewis.—p. 336.
Demonstration of Antigens and Antibodies in Human Serum by Anaphylactic Method After Injections of Horse Serum. E. Arndt.—p. 346.
*Does a Filtrable Form of Scarlet Fever Virus Exist? U. Friedemann and H. Deicher.—p. 354.
*Tuberculosis Serum. O. Ornstein.—p. 360.
Floor Cleaning from Bacteriologic Standpoint. F. Eckert, G. Schaede and W. Wilke.—p. 382.
Action of Picric Acid (Melinite) on Human Organs. J. Matussewitsch. —p. 392.
Permanent Cultures of Gonococcus. A. Cohn.—p. 395.
Type Specificity in Paratyphoid Group. F. Kauffmann.—p. 411.
Different Methods of Preventive Inoculation Against Rabies Compared as to Their Safety. M. Glusmann, O. Kowalewa and L. Predtetschenskaja. —p. 426.

Action of Sun's Rays and Wind on Metabolism.—Certain reflexes in the autonomic nervous system, on which normal health depends, are controlled, Jakowenko states, by climatic factors, the chief of which are wind and sun. In a series of forty experiments, each covering three days, carried out at the seaside, the basal metabolism was increased by the wind and by diffused ultraviolet rays, and decreased by an excessive amount of heat rays from the sun. The increase observed during sun-and-air baths is due to irritation of the sympathetic nerve endings by the ultraviolet rays diffused from a wide expanse of sky and by the cooling produced by the wind. This metabolic increase through the action of the sympathetic is the aim of all climatotherapy. To obtain it, the velocity of the wind and the heat from the sun's rays should be moderate. When the wind is of low velocity and the heat from the sun's rays is great, the basal metabolism during sun-and-air baths is lowered and there are symptoms of stimulation of the parasympathetic.

Does a Filtrable Form of Scarlet Fever Virus Exist? Washings from the nostrils of a patient on the seventh day of a severe scarlet fever were filtered through Berkefeld-W candles and, after their sterility was assured, were rubbed into the organs of the pharynx of two persons in whom the Dick reaction was strongly positive. Both these experimental subjects remained well. The same filtrate was painted on the throats of four patients who had large numbers of hemolytic streptococci in the throat because of tonsillitis. These four persons also remained well, in spite of the fact that their Dick reaction was strongly positive. That one of these was actually susceptible to scarlet fever was proved four weeks later, when he contracted the disease on exposure to a house infection. In certain scarlet fever toxin solutions, untreated by phenol, kept in sterile ampules, Friedemann and Deicher noted the sediment described by Ramsine. Neither streptococci nor any structures resembling cocci could be detected in this sediment under the microscope nor could any organisms be cultured from the contents of the ampules on blood agar or serum bouillon. Nevertheless, hemolytic streptococci were present in preparations of the spleen and of the kidneys of a mouse that had been infected with the sediment. Streptococci were obtained in pure culture from these organs and toxin prepared from these organisms proved to be true scarlet fever toxin. He points out that bacteriologic control of scarlet fever convalescents would be illusory if a form of the streptococcus, filtrable but pathogenic to man, exists in the throat in fresh cases. Eleven samples of urine were obtained from patients in the acute stage of scarlet fever nephritis. Ten of these proved sterile on culture and in animal experiments. The eleventh sample was likewise sterile on culture, but when injected into the peritoneum in five mice gave results that were negative in four but positive in the fifth. The heart blood, the spleen and the kidney of this last animal yielded rich cultures of the hemolytic streptococcus on the blood plate. These organisms proved to be true scarlet fever streptococci. The authors are convinced that the sole infectious agent of scarlet fever is *Streptococcus hemolyticus scarlatinae* in its culturable form and that no practical importance attaches to unculturable forms.

Action of Tuberculosis Serum.—Ornstein made numerous experiments to investigate the mechanism of immunity in tuberculosis. He found that the bactericidal function of the organism of tuberculous animals was transmissible in their serum, and particularly in the specific exudate of superinfected animals. The serum of rabbits infected with bovine tuberculosis imparted to guinea-pigs its bactericidal power against the bacilli of human tuberculosis as well as of bovine tuberculosis. The isolated pseudoglobulin as well as the serum of specifically treated tuberculous cattle, likewise concentrated pseudoglobulin obtained from tuberculous exudates of human origin were able to transmit their bactericidal function to guinea-pigs and mice and gave a relative protection. The development of tuberculosis was delayed and was less extensive in guinea-pigs and mice treated with tuberculosis serum before and after infection, as compared with animals untreated or treated with normal serum. In both the tuberculous and the normal organism, the effect of the tuberculosis serum was seen in an allergic acceleration of specific, inflammatory and resorptive processes. Treatment with killed tubercle bacilli before infection produced sensitiveness to tuberculin in guinea-pigs and mice and modified the course of the disease in the direction of mildness.

Zeitschrift für Krebsforschung, Berlin

26: 89-182 (Dec. 30) 1928

Effect of Puncture on Protoplasm of Tissue Cells Cultured in Vitro. T. Péterfi and O. Kapel.—p. 89.
*Mixed Connective Tissue Tumor of the Breast. S. Kurosu.—p. 99.
Granulation Tumors. F. J. Lang and C. Häupl.—p. 113.
Frequency of Lung Cancer and Reasons for Its Increase. E. von Zalka. —p. 130.

Errors in Diagnosis of Malignant Growths During Life. I. M. Kranzfeld. —p. 146.
Value of Roentgen Ray in Diagnosis of Lung Cancer. A. E. Uspensky. —p. 166.

Mixed Connective Tissue Tumor of the Breast.—The tumor in Kurosu's case was as large as a man's head. It occupied the whole right breast of a woman, aged 80. The breast was amputated. On examination, the tumor was found to consist of fields of round cell, spindle cell and giant cell sarcoma, angiosarcoma, chondrosarcoma and osteosarcoma; in short, every stage of connective tissue development was represented.

Zentralblatt für Gynäkologie, Leipzig

52: 153-216 (Jan. 21) 1928

*Treatment of Perforated Appendicitis in Advanced Pregnancy. G. Conrad.—p. 162
*Extensive Intra-Abdominal Hemorrhages from the Ovaries. M. Pascher. —p. 165.
*Sudden Death in Pregnancy from Rupture of Aneurysm of Splenic Artery. R. Remmelts.—p. 167.
Early Diagnosis of Carcinoma of Portio: Reply to Kermauner. H. Hinselmann.—p. 168.
External Transmigration of Ovary. E. Fulde.—p. 170.
Levator Suture in Operations for Genital Prolapse. E. Haim.—p. 173.
Foreign Body in Uterus Without Disturbance of Pregnancy. H. Nahmmacher.—p. 174.

Treatment of Perforated Appendicitis in Advanced Pregnancy.—Conrad reports five cases of perforated appendicitis, three with diffuse peritonitis in the fifth month, between the seventh and eighth months and at term, respectively, and two with encapsulated abscess in the sixth month. In the two latter and in the case with perforation in the fifth month, premature delivery did not follow the appendectomy. In the patient between the seventh and eighth months, the birth occurred twenty-eight days after the operation. In the fifth case the differential diagnosis between appendicitis, ileus and premature separation of the placenta was difficult and delivery by laparotomy was decided on. On opening the abdomen diffuse peritonitis was found. It was impossible to reach the appendix on account of the size of the uterus. Hence the abdominal wound was provisionally sutured and the patient was delivered by vaginal cesarean section. The abdominal cavity was again opened but the appendix was not found; it had apparently been destroyed by the granulation tissue. The cecum was liberated from its adhesions with difficulty, and the perforation of its wall was sutured. The uterus was not removed. In the puerperium thrombophlebitis with pulmonary abscesses and general sepsis developed, from which the patient died two and one-half months later.

Extensive Intra-Abdominal Hemorrhages from the Ovaries.—Three cases of intra-abdominal bleeding from rupture of ovarian cysts are reported by Pascher. From 500 to 1,000 cc. of fluid was found in the abdominal cavity. Ruptured cysts, from the size of a pea to that of a walnut, were visible on the ovaries. In one case, microscopic examination showed corpus luteum cyst.

Sudden Death in Pregnancy from Rupture of an Aneurysm of the Splenic Artery.—A woman at the end of pregnancy presented signs of internal bleeding. She died during the preparations for laparotomy. Two liters of blood were present in the abdominal cavity. The blood was found to have come from a tear in a 2 cm. long aneurysm of the splenic artery. Remmelts suggests that this accident should be thought of when retroperitoneal bleeding is discovered on laparotomy.

Hospitalstidende, Copenhagen

71: 1-24 (Jan. 5) 1928

Tuberculosis of Eye Treated with Sanocrysin. S. Sander-Larsen.—p. 1.
Shifting of Blood Reaction as Cause of Disease. P. Drucker.—p. 12.
*Supravesical External or Oblique Internal Hernia. H. Møller.—p. 17.

Supravesical External or Oblique Internal Hernia.—Møller presents the case of a man, aged 45, with sudden onset of pain in the abdomen, found to result from a supravesical external hernia of walnut-size. The bladder was not included in the hernia. A direct hernia was also present. He considered Bassini's operation insufficient and placed the spermatic cord in front of the aponeurosis.

71: 25-48 (Jan. 12) 1928

Typhoid in Kolding and Vicinity. A. Hansen.—p. 25.
*Traumatic Compression of Brain and Operative Treatment. F. Djørup. —p. 35. C'td.

Traumatic Compression of Brain and Operative Treatment.—Djørup describes the causes of traumatic compression of the brain and the cerebromedullary phenomena which constitute the most important general symptoms of diagnostic significance, together with the focal symptoms valuable in local diagnosis. Attention is called to the frequent absence of the free interval, as well as absence of the slow pulse, in cases in children. Of five children with acute traumatic increase of amount and pressure of the spinal fluid, without fracture of the skull, all were operated on and four recovered; of two adults, with skull fracture, also operated on, both recovered. The eight cases of subdural hemorrhages with fracture of the skull and contusion of the brain all proved fatal, in five operation was done. Four of six patients with epidural hemorrhages with fracture and contusion were operated on, three recovered; in the one case without fracture and contusion, recovery followed operation. The three patients with simultaneous epidural and subdural hemorrhage with fracture and contusion died. One had been operated on. Operation was performed in all the nine cases of fracture of the skull with depression of the fragment, with and without hemorrhage and contusion; five recovered. In acute traumatic compression of the brain trepanation is advocated. In cases with neither fracture nor epidural nor subdural hematoma, a small incision should be made in the dura and left open. The prognosis is good, especially in children. In cases with fractures, treatment is directed to the serous exudate, the fracture playing a subordinate part both in development of symptoms and result of treatment. In subdural hemorrhage, if improvement fails to follow lumbar puncture, trepanation is indicated. The prognosis is grave. In epidural bleeding, the localization of the hemorrhage over the motor region of the brain is of the greatest importance in diagnosis. The aim of treatment should be to relieve the compression and insure hemostasis; trepanation is the only method. With it the prognosis is favorable.

Ugeskrift for Læger, Copenhagen

90: 103-122 (Feb. 2) 1928

Fractures of Spinal Column. H. Abrahamsen.—p. 103. C'td.
*Studies on Blood Quantity in Man. S. A. Holbøll.—p. 110.
Pes Valgus Incipiens. F. Sadolin.—p. 112.

Studies in Blood Quantity in Man.—With Lindhard's method of examination, Holbøll found that in men, as opposed to women, vital red is equally distributed in the blood five minutes after intravenous injection.

90: 123-150 (Feb. 9) 1928

Treatment of Pernicious Anemia with Liver and Liver Extract. E. Meulengracht.—p. 123.
*Fractures of Spinal Column. H. Abrahamsen.—p. 133. C'cn.

Fractures of Spinal Column.—Abrahamsen discusses the most important of the pathologic conditions in lesions of the spinal cord of interest to the surgeon, the different fractures of the spinal column from the isolated, less grave, to the grave corpus fractures, and the treatment of the corpus fractures with and without complications. A report is made on 125 cases. In sixty-seven cases of compression fractures, nine with medullary lesions, there was one death; in forty-five cases of total luxation fractures, forty-two with medullary lesions, there were thirty-eight deaths. In the cervical region there were three cases of direct, thirty-one of indirect trauma; in the dorsolumbar region, forty-five cases of direct and forty-one of indirect trauma. Cervical fractures with lesions of the cord usually proved fatal; hematomyelia was the most common lesion in the nonfatal cervical cases. In the dorsolumbar cases, medullary complications played a less important part than in the cervical cases, and infection of the urinary tract was the cause of death nine times. Of the sixty-seven surviving patients followed up, twenty-four are engaged in their former occupation, thirty-six were obliged to take up lighter work, and seven (six aged over 60) are incapable of work.

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